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DIAGNOSIS IN HISTORICAL PERSPECTIVE

IAGO GALDSTON

In 1836, the Boylston Medical Committee of Harvard University advanced as a prize thesis the question "How far are the external means of exploring the condition of the internal organs to be considered useful and important in medical practice?"

Of the dissertations submitted, the best was adjudged to be one bearing the motto—"Inter labores et taedia." When the sealed envelope accompanying this dissertation was opened, the name found therein was Oliver Wendell Holmes.

Holmes was, therefore, awarded first prize. Two other of the essays submitted were also considered highly meritorious, and the prize donor being willing to extend his generosity, two added awards were made to Dr. Robert W. Haxall[1] (1802-72) of Richmond,

[1] Dr. Robert William Haxall (1802-1872) was a native of Petersburg. His education was begun at Yale College and continued, after preliminary study, under his kinsman, Dr. Robert Barton of Winchester, in the medical departments of the Universities of Pennsylvania and Maryland. From the latter, he took his degree in 1826 and after two years clinical experience returned to Richmond to practice. In 1832, he went to New York City to study the epidemics of cholera raging there and two years later sailed to Europe, seeking further advantages in the schools and hospitals of France and England. In 1836, he returned to Richmond and until his death was one of her outstanding physicians. He was a frequent contributor to contemporary medical literature and twice received the Boylston Prize, with Essays on "Fistula Lachrymalis" and "The External Means of Exploring the Internal Organs."

Virginia, and to Dr. Luther Vose Bell [2] (1806-62) of Derry, New Hampshire.

These essays were considered so very valuable that the Massachusetts Medical Society authorized their publication and their gratuitous distribution to "each fellow of the Society and to every other

[2] Bell, Luther Vose (December 20, 1806-February 11, 1862), physician, politician, was descended from Robert Le Bel, a Norman, who migrated to Scotland in the eleventh century. A descendant, Matthew Bell, born about 1650, moved to Londonderry, Ireland. His son, John, emigrated to Londonderry (now Derry) N. H. in 1720. The latter's son, John Bell, senator, and his grandson, Samuel (q. v.), chief justice, governor, and senator were both New Hampshire products. Luther Vose, fifth child of Samuel's first wife Mehitable (Dana) Bell, was born in Francestown, N. H. He went to school at local institutions and entered Bowdoin College at twelve. Graduating in 1823, he immediately began the study of medicine in New York City, under his elder brother, Dr. John Bell. Soon he moved to Hanover, and in 1826 he received his M. D. from Dartmouth. Too young to practice, he spent a year in a "Commercial Emporium" where he doubtless picked up some knowledge of men and affairs. Starting practice in Chester, N. H., he led the strenuous life of a country doctor and became deeply interested in the needs of the insane. In 1835 and 1836, he was elected representative and persuaded the state legislature to establish an institution for their proper care. He was called in 1836 to be physician and superintendent of the McLean Hospital for the Insane at Charlestown, Mass. Here he took a lively interest in medical and administrative problems. His annual reports are models and in them he discusses and illuminates various psychiatric subjects. He resigned on account of ill health after twenty years of admirable service.

Bell showed early literary aptitude. In 1835, he wrote a Boylston Prize Essay on New England diet, in which he sagely remarks "the Yankee citizen encounters his dinner as he would any other necessary work that has to be accomplished." In 1848 he wrote "On A Form Of Disease Resembling Some Advanced Stages of Mania and Fever." Hereafter this type of insanity was recognized as Bell's Disease or Bell's Mania. After his retirement from hospital work, he was often called upon as a medico-legal expert. As a witness, he was concise and practical and carried great weight with judge and jury. During his active years, he frequently appeared as a Lyceum lecturer. His talks, usually on mechanical problems, "showed a bent of mind adapted to the conveyance of a profitable instruction in a lively way." He was always an adherent of the Whig party. In 1850, he was an executive councillor to Governor Briggs of Massachusetts. As a delegate to the Whig national convention of 1852 he advocated the candidacy of Daniel Webster. At the outbreak of the Civil War, in spite of ill health, he at once enlisted. He was appointed surgeon to the Eleventh Massachusetts Regiment but was soon promoted and became Hooker's Brigade surgeon. In February, 1862, at Budd's Ferry, Maryland, he died, probably from some complication of pulmonary tuberculosis. He was married to Frances Pinkerton, daughter of James Pinkerton, of Derry, New Hampshire, in 1834.

respectable physician in Massachusetts." The essays appeared in book form as Volume 7 in the Library of Practical Medicine (1). It is, I am informed, a rare American item.

This happened just a little over a century ago. The prize winner, then twenty-seven years of age, was destined to become one of the bright luminaries in American medicine. The question, though ambiguously worded (the essayists were somewhat at a loss how to interpret the phrase " the external means of exploring the condition of the internal organs ") was evidently of vital concern to the Boylston Committee and to the Massachusetts Medical Society.

All of these factors are of considerable interest to us in the light of our subject for in the essays of Bell, Haxall, and Holmes, we find a clear representation of " diagnosis " as it was understood and practiced one hundred years ago.

Of the three, the ablest essay appears to be that of Bell, while Haxall's contribution is hardly noteworthy. Holmes' dissertation, as is to be expected, has a superior literary quality, but it lacks the scholarly foundation and the breadth of vision that distinguishes Dr. Bell's contribution.

There is a refreshing and entirely modern spirit in Bell's words. " Symptoms," he wrote, ". . . are not disease; they are merely the language, the signs; the appreciable evidence of some internal change which is invisible to our senses in a great degree during life, and the presumed effects of which are in part manifested after death."

Symptoms are divided by Bell into two groups, one vital or physiological, the second, physical. Among the vital symptoms, he lists the pulse, the seat of suffering, the bodily expression, and the patient's recitation of the history of his disorder.

" The symptoms of disease," Bell wrote, " are addressed to various, indeed it may now be said, to the entire circle of our external senses."

He lists then the eye, the ear, the sense of smell, and the sense of taste, citing as an instance of how taste may be employed in diagnosis " the one fatal and highly interesting disease . . . diabetes mellitus." (2)

Bell then singles out the sense of hearing " once scarcely available to any extent in the healing art " and devotes the remaining portion

of his dissertation to the inventions which had produced "results most extraordinary, unequivocal, and useful." The inventions he refers to are thoracic percussion, and auscultation.[3]

Holmes' essay begins with a bold attack on the question set. Inspection, mensuration, palpation, auscultation, percussion and succussion, are listed by him as the external means by which the condition of the internal organs may be determined.

As to auscultation, it is gratifying to find the author of the Satirical Stethoscope Song, writing in a vein faintly suggestive of surprise and indignation at the indifference shown to Laennec and his invention.

"The new methods of direct exploration," Holmes wrote, "can only be said to have been before the English and American public for the space of fifteen years. It is to be remembered that in the very city where they originated, the discoveries of Laennec were not at once received without opposition. Thus, in the first edition of the *Dictionary of Medicine*, in twenty-one volumes, the author of the article 'Auscultation,' estimated so very moderately the importance of the new method of exploration, that after reading it, one might have been tempted to throw the stethoscope in the receptacle which holds the scala of Hippocrates and the balance of Sanctorius."[4]

[3] On the utility of the stethoscope, Bell offers in footnote the following comments and testimonial: "I have no means of knowing to what extent the practice of exploration of the chest has been adopted in the United States. In the larger towns and cities, I am aware, it has been considerably and successfully cultivated, but in the interior of New England, at least by the great body of practitioners, it had been neglected. It has unfortunately been deemed, and this I doubt not from the Frenchified aspect of the works in which it has been communicated, as a subject too abstruse and difficult for the common class of medical man. As a single individual laboring under all the disadvantages which have been brought forward in disparagement of these methods, except the favorable circumstances of having been faithfully indoctrinated in its principles by a private pupil of the illustrious inventor, I would accord my unqualified opinion of its high value to the ordinary physician, nor would I, after more than a dozen years of experience, relinquish its aids, so soon as any other single means of pulmonary diagnosis."

[4] Then, as if offering an apology for his own flippant sport with the stethoscope, Holmes continues, "But if with the most startling novelty and with extravagant promises, an invention came forward which demands the laborious training of a sense hitherto uncultivated in its more delicate capacities, bearing in one hand an instrument which is to be the practitioner's inseparable companion, and in the other a treatise full of new terms and peculiar doctrines, is it to be supposed that the

The warrant for dwelling at such length on the Boylston Committee prize thesis of 1836 appears to me to be the intrinsic interest of the question proposed and of the prize essays submitted. Here we find authentication for the words of the well known French clinician, Charles Achard, who wrote:

> At the beginning of the nineteenth century, the clinician observed studiously the 'facies,' the general aspect, and the constitutional habitus (of the patient); he examined the tongue, the mirror of the stomach; he palpated the pulse (tatait le pouls), gaged the temperature of the skin with his hand, and observed the gross characteristics of the urine, of the excreta (des Selles), and of the expectorants. He practiced palpation—'et le toucher.'[5] (3)

These representations afford us a base from which to set out in our review of the development of diagnosis. They afford us a norm by which we can gauge the progress made during the past century. Cleaving to the core of our matter, let us set in apposition to the foregoing, the description of the diagnostic instruments and procedures available to the medical man at the beginning of the twentieth century. I quote from an address delivered in 1916 by Lewellys F. Barker, entitled, "The Development of the Science of Diagnosis." (4) The fourth year medical student, or the young intern, Dr. Barker said, is able to "inspect, to percuss, to auscultate, to make a bacterial culture or a Wasserman test, to measure systolic and diastolic blood pressure, to pass a stomach tube, to do a phenolphthalein test, to make a differential count of the white blood corpuscles, to study roentgenograms, to examine eyegrounds, to test reflexes, to do lumbar punctures, to titrate glucose—and the like."

That was spoken in 1916. How many new instrumentalities, how

schools of Sydenham and Cullen, would consent, without a struggle, to recommence their education and remodel their nosology?

It was perfectly natural that they should look with a suspicion upon this introduction of medical machinery among old, hard working operatives; that they should for a while smile at its pretensions, and when its use began to get in among them, that they should observe and signalize all the errors and defects which happened in its practical application. And erroneous conclusions are formed by those who employ direct exploration, as well as others."

[5] The essays of Holmes and Bell also echo the words of S. Weir Mitchell, 1830-1914, whom Garrison titles the historian of instrumental precision in medicine. Mitchell wrote, "When I was a lad, there were then alive men who could recall the day when what a patient said, and the physician saw and felt, were all that a case of disease had to tell him."

many new diagnostic procedures have been added to this impressive list during the last quarter of a century you can gauge out of your own experiences. To catalogue them would prove a trying task and one that would not profit us in our aims. For it must be evident from even this cursory review, that the science of diagnosis, as we know it and practice it today, is of very recent origin. It is little more than a century old. It is still a young science, experiencing the growth spurts of juvenility.

I will abstain from inventorying diagnostic armamentarium, and from cribbing and rehashing the tales of Auenbrugger's discovery, of Laennec's invention, and of the inventions or discoveries of the thermometer, the pulse counters, the ophthalmoscope, x-ray, electrocardiograph, etc., etc. These tales have been told very competently by a host of men. You will find good reading matter and much instruction thereon in the writings of S. Weir Mitchell, William Shainline Middleton, and William Osler.

I would rather pursue and develop matters and problems less well known—those dealing with the non-instrumental aspects of diagnosis. For to diagnose is to perform a function and that function cannot be defined in terms of the instruments employed or of the techniques pursued. Oddly, very few, even among those who have written text books on diagnosis, have attempted to define the nature and quality, the ultimate objectives, the ends of diagnosis.

In a search of the literature (not too exhaustive, I must confess), I found but one author who boldly faces the question. Dr. Ludolph Krehl, in an address entitled " Ueber der Enstehung der Diagnose " (5), both sets and answers the question, " was sollen und wollen wir diagnostizieren? Was gehort zu Diagnose? " In answer, he wrote:

> It (i. e. diagnosis) is the summation of all that deviates from the normal in a sickly body. This involves much more than is commonly thought. We need to know both the kind and degree of functional disturbance affecting an organ-system. We must clearly determine the underlying histopathological and chemical changes. Finally, we must seek to establish the cause of illness, and also the collateral effects of the disorder upon the organs not immediately involved. In other words, everything that is abnormal must be summed up in the diagnosis in such wise that all the signs and symptoms are accounted for and integrated. All of this must be established relative to a given person with definite psychological and physical endowments who lives under particular circumstances and in a given milieu. ' Das endziel der diagnose ': the ultimate

Contrast with this rather involved, but in many respects competent, definition of diagnosis that, or rather those, given by the dictionary. The dictionary gives the philology of the term as being, dia = apart + gnosis = knowledge. It proceeds to define diagnosis as (1) the art of distinguishing one disease from another; (2) the determination of the nature of a case of disease. Then we come upon the variety of terms prefixed to diagnosis to form compounds—such as biological, clinical, differential and direct diagnosis; diagnosis by exclusion, group diagnosis, and laboratory diagnosis; pathological, physical, regional, roentgen, and serum diagnosis, and last, but not least, tentative diagnosis.

In this contrast we come aplomb of the fundamental problem of diagnosis. This problem troubled Hippocrates, and stirred his passions. This problem continues to agitate the best of our medical contemporaries. For it lies at the very core of our professional competence. We must resolve whether diagnosis is as the dictionary maintains, "the art of distinguishing one disease from another," or as Krehl (quoted only as prototype), contends, to diagnose is to arrive at the summation of all that deviates from the normal, in a sick individual of definite psychological and physical endowments living under particular circumstances in a given milieu.

I believe it will be granted outright that diagnosis as it is practiced today more often conforms to its dictionary definition, than to the other. Medical history, on the other hand, reveals that the best clinicians have understood and practiced diagnosis in its broadest encompassments.

This matter is of no small moment and commands our best attention. Nosology, the classification of disease, is today a highly developed science. Only a little less well developed is the science of specific and near specific therapy. Between the two, it would seem, all medical knowledge is confined—even as it appears to be in that handy little volume, Merck's Manual. On the other hand, time and time again we hear some strident, some commanding, some pleading voice raised in protest, contending that our crystallized nosology hampers no less than it aids, the understanding of morbid processes,

objective of diagnosis is to recognize and to determine 'welchen einfluss die krankheit auf diesen einen Menschen hat.'

that our specific and near specific therapies, useful as they are in dealing with the emergency episodes in disease distract us from the more fundamental and effective treatment and correction of disease. This is an old complaint. We find it in Hippocrates. In *Ancient Medicine* it is written:

> All who, on attempting to speak or to write on medicine, have assumed for themselves a postulate as a basis for their discussion—heat, cold, moisture, dryness, or anything else that they may fancy—who narrow down the causal principle of diseases and of death among men, and make it the same in all cases, postulating one thing or two, all these obviously blunder in many points even of their statements, but they are most open to censure because they blunder in what is an art, and one which all men use on the most important occasions, and give the greatest honors to the good craftsmen and practitioners in it. (6)

If we substitute for the terms "heat, cold, moisture, dryness," their present day equivalents which "narrow down the causal principle of diseases and death among men, and make it the same in all cases, postulating one thing or two," we find Hippocrates' arguments and censures as valid today as when first expounded, twenty-four hundred years ago. It is interesting to pursue this matter further. At the time of Hippocrates, there existed two dominant schools of medical thought and practice, that of Cos, to which Hippocrates belonged, and that of Cnidus, of which the chief physician, on the authority of Galen, was Euryphon.

Between the schools of Cos and Cnidus there were wide divergences in thought and practice. The Cnidians were "long on diagnosis and short on therapy." They classified diseases according to numerous divisions and subdivisions, taking as their basis minute variations and symptoms. Hippocrates and the Coan physicians were little preoccupied with the minutia of diagnosis. In the words of W. H. S. Jones—the English translator of Hippocrates, the Coan physician "held that it was impossible to decide with certainty when a variation in the symptoms constituted a different disease, and he blamed the Cnidian physicians for multiplying types by assigning essential importance to accidental details. He attached far less value to diagnosis than he did to what may perhaps be called general pathology of morbid conditions, in particular of acute diseases. In all these diseases, according to Hippocrates, there are symptoms,

or combinations of symptoms, which point to certain consequences in either the near or the remote future. In other words there is a common element, of which can be written a common medical history." (7)

Jones, whose words I have just quoted, is partial to the Cnidian School. He somewhat excuses what he considers to be the Hippocratic limitations, in explaining that " it must be remembered that the means of treatment available to Hippocrates were few in number. The most he could do was to hinder Nature as little as possible in her efforts to expel a disease, and to assuage pain as far as the limited knowledge of the time permitted."

" To a certain extent," Jones writes, " this view is correct; in the Hippocratic age little could be done for patients suffering from acute diseases except to keep them warm and comfortable and to restrict their diet. Yet we must always remember that ' general ' pathology really does not exist, and that any prognosis based upon it must be very uncertain indeed."

Littré, the illustrious French translator of Hippocrates, is also much intrigued by this divergence between the schools of Cos and Cnidus. He does not, however, share the opinions of Jones. In vigorous language, he expounds the differences between Cos and Cnidus and emphatically registers his sympathy with the School of Hippocrates.

> The basic principle of the method of Cos is prognosis. That is to say, a prepondering study of the different aspects of the general condition.
>
> The basic principle of the method of Cnidus, is the study of the diversity of diseases.
>
> That which Hippocrates condemns in the Cnidian physicians is their failure to be concerned with the issue and the development of the malady and in their being content most of the time with the description of symptoms and of incidentals. It is for Hippocrates, an accepted and specifically expressed injunction that one should learn from the regimen of men while they are as yet in health. Hippocrates attacks the Cnidian physicians and reproaches them for being too much concerned with the details of the maladies, for failing to apply even that concern in their therapy, and for prescribing too few remedies. That which Hippocrates desires above all is a substitution for the *hypothesis*, the study of the living being (tou anthropon) of the reality (tou eontos), and the study of the manner which the body reacts (se comporte) in regard to everything. (8)

I must draw your attention to a sentence quoted from Jones, for

it touches the heart of the matter. Jones wrote, " Yet we must always remember that ' general ' pathology really does not exist and that any prognosis based upon it must be very uncertain indeed." (9)

In these words, Jones echoes the high hopes and the pretensions of the histopathologists, first promulgated by Virchow and supported since his time, by many pathologists. Experience and increasing knowledge have invalidated these pretensions and dissipated these hopes. We have come to recognize that pathological reactions are, to use scholastic terms, more universal than particular. The reverse conviction has given rise to numerous blunders and mountainous but sterile labors.[6]

This matter of " general " pathology was concisely summed up in a recent contribution by Lorenz S. Michaëlis, entitled, " The Limitations of Histology."

" What we can see on a slide," wrote Michaëlis, " are the responses of cells and tissues to aetiological factors. The number of these (aetiological) factors is almost unlimited, but the variety of responses is not. The number of different changes a cell or a tissue can undergo is very small indeed. And furthermore, each kind of cell or tissue has to rely on its own specific and limited choice of responses to the great variety of factors able to provoke a response." (10)

What has been said of pathology holds equally true of symptomatology. Since Johannes Müller formulated the law of specific physiological response, we have known that it is impossible to infer from the physiological response the nature of the stimulus provoking it. There is then, as Hippocrates maintained, a general pathology and a general symptomatology, both of which serve best as the foundation of diagnosis.

[6] We need only recall in this connection, the fate of Villemin's brilliant demonstration of the communicability of tuberculosis, which was discredited by Clark, Sanderson, Cohnheimer, B. Fränkel, Gerlach, Talma, and M. Wolff. Because these men were able to produce tubercles in experimental animals by inoculating them with a variety of innocuous and miscellaneous substances, they argued against the communicability of tuberculosis. Tubercle formation, as a non-specific tissue response to foreign body invasion, was recognized only after much controversy and many labors. The tuberculosis tubercle was then understood to be a complex of tissue reactions each non-specific in itself, but forming in combination a unique pattern. Thus the tubercle itself is a foreign body reaction; the central necrosis or caseation is the effect of the noxious toxins of the tubercle bacillus upon the proximal cells.

I hasten to add, lest the argument be misconstrued, that Hippocrates did not disparage the worth and usefulness of the particular. His *Aphorisms* are in themselves but a precious collection of particulars. What he contended, and I echo his words, was that the particular becomes animate only in the general; that without the matrix of the larger concept, without the regard to the living being (τοῦ ἀνθρώπου) and to the reality (τοῦ ἐόντος) the particular is likely to be sterile, delusive, and fallacious.

This deep conviction has been shared by the best of clinicians in all the ages. It was stoutly defended by Galen, and by Sydenham. We find it elaborated with fine scholarship and deep sincerity by William A. White, whose excellent book, *The Meaning of Disease*, is regrettably none too well known to the medical profession. (11)

To sum up our consideration, we observe then that since the days of Hippocrates "to diagnose" has meant to perform one or the other of two distinctly different functions. To one group it has meant the definition of a disease as a definite and distinct entity. Such was the meaning of diagnosis to the Cnidian school. Such is the more common understanding and practice of diagnosis today. To the other group, the school of Cos, the Hippocratic group, to diagnose meant to define a clinical problem in terms of the individual affected, to be solved therapeutically.

This interpretation of diagnosis is enlisting the interest and support of a mounting number of clinicians. In Europe, previous to the outbreak of the war, there was an organized movement in this direction that went by the name of Neo-Hippocratism.

To those not steeped in these matters, it may seem that the distinctions drawn between diagnosis as the definition of a disease entity and diagnosis as the definition of a clinical problem affecting a given individual to be solved therapeutically, is either much ado about little, or merely an exercise in dialectics. Such an impression, however, can be promptly dissipated and corrected by an earnest study of what is implied in the two distinctly different conceptions of the function to diagnose.

To diagnose a disease as a distinct entity, is a more primitive function. It requires but a moderate mental discipline. It can frequently be accomplished by the utilization of a variety of inanimate

instruments. It offers only a narrow and none too stable foundation for effective therapy.

Diagnosis as definition of disease entities predominates when and where physiological knowledge and physiological thinking is at its lowest.

Diagnosis practiced as the definition of a clinical problem affecting a given individual, to be solved therapeutically, is by far the superior and more difficult function. It is rooted in physiology. It flourishes when and where physiological knowledge and physiological thinking is in the ascendency.

In the emphasis on physiology, we have a clue to the intriguing problem as to why Hippocratic diagnosis differs so radically from diagnosis as we know it today, and again, why there is current among us a revival of the Hippocratic practice. Hippocratic medicine was essentially physiological medicine, and today once again, physiology dominates medical science.

Hippocratic physiology however was empirical; while present day physiology is biochemical. But mark this, both Hippocratic and present day physiology are biological, that is, essentially concerned with the body as a living organism. This type of physiology is distinct from the physiology of the test tube and dissection table, which was cultivated from the seventeenth to the beginning of the twentieth century.[7] The Hippocratic physician studied man in his environment during health and illness. He noted the factors in diet and environment (airs, waters, and places) rest and exercise which in health favored well being and in illness promoted recovery. This in essence is physiological medicine. It permeates the Hippocratic Corpus, and be it noted had a long lasting effect on medicine, even down to the time of the Salernian School, as may be seen in the Regimen of Salerno.

The empirical physiology of Hippocrates was in the seventeenth century challenged by Sanctorius and by William Harvey. The works of neither Sanctorius nor Harvey had any effect upon the thinking or activities of their medical contemporaries. But with them there was initiated the new science of physiology, one that discredited the old—but one that was of itself unable to give to

[7] Hippocrates thus insisted that "A physician's studies should include a consideration of what is beneficial in a patient's regimen while he is yet in health." (12)

medicine a supportive frame work of theory and fact. We must bear in mind the great confusion, the babble of tongues that filled the medical world from the time of Sydenham until the middle of the nineteenth century. Garrison labels the seventeenth century, "The Age of Individual Scientific Medicine," and the eighteenth century, "The Age of Theories and Systems."

"We see the great theorists of the time," Garrison writes, "as Emerson has described the gods, each sitting apart in his own sphere 'beckoning up to their thrones,' yet somehow Hippocrates and Sydenham, Vesalius and Harvey, Celsus and Paré, seem nearer and more accessible to moderns than Stahl or Barthez, Bordeu or Boerhaave, Brown or Reil." (13)

In the essay of Dr. Bell, with which we dealt at the beginning of this paper, we find this rather poignant complaint on the sterility of the physiology of the period, a physiology aptly described as necrological, in contrast to the physiology developed in the present century which is essentially biological. Dr. Bell wrote,

> That science, physiology, it must be confessed has thus far been of little service to practical medicine;—nay more, its values and delusive lights have served rather to mislead, than to guide us from its earliest history to the present era.
>
> The humoral, the chemical, the mechanical, the physico-mechanical systems of physiology, of Cullen, of Brown, of Darwin, of Rush, and shall I say it? of Broussais, are a few of the consequents of the pretended application of the principles of physiology to the healing art. Their physiology was imperfect in part, and in part false; and as a consequence, their doctrines are mere assumptions of unproved, and as time has demonstrated, unprovable facts, or downright imaginations; and just so far as they respectively, have had an influence in turning away the mind from the discovery and consideration of facts, and their application of experience, just so far have they been the cause of incalculable injury to man, and to the progress of science. (14)

Deprived of the robust empiricism of the Hippocratic medicine, and finding the physiology of the period fragmental in knowledge and confused in theory, the physicians of the eighteenth and nineteenth centuries found refuge in the then flourishing science of morbid anatomy. This science dealt at least with tangibles. To quote Bell again, "Practical medicine," he wrote, "must mainly rely for all that is true, and valuable, and capable of being applied, upon the knowledge of pathological anatomy or the changes produced by

disease, and upon the internal indications which mark these morbid alterations. The former of these auxiliaries to the healing art is comparatively a subject of modern origin. Not a century has elapsed since the great work of Morgagni on the seats and causes of disease was given to the world, the first valuable contribution of pathological science; after him in slow succession appear the labors of Portal and Baille, of Corvisart and Bichat, followed in more recent times by the bright galaxy of French pathologists, as Boyle, Andral, Laennec, Louis, Cruveilhier, and Hope, Carswell and others in England, whose labors will be felt to the latest days of medicine because they depend upon facts for their eternal basis." (15)

You can see from this how completely physiology and physiological thought were divorced from clinical medicine. That Bell was not alone in his belief may be gathered from the words of Rokitansky, who in 1846, wrote, " Pathological anatomy should be the base not only of the knowledge of physicians, but also of their practice as it contains all there is in medicine of positive knowledge." (16) Virchow carried this thought to its extreme in contending that there is no such thing as a sick body that is disordered in all its parts. He maintained that no doctor can systematically think of a morbid process unless he is able to assign it to a place in the body.

The phenomenal development of bacteriology strengthened the conception of diseases as specific entities and appeared to justify that type of diagnosis which concerns itself primarily with the morbid process and little, if at all, with the human being involved. This was so very much the case (and still is so today) that von Behring gave it as an article of faith and conviction that all diseases are unique processes caused by unique forces or agents, and that all therapy to be successful, must be directed against the aetiological factors. As a corollary, Behring maintained that all efforts directed toward improving the health of the living organism, or toward raising its resistance more often leads to havoc than to the desired end.

At this juncture, I should like to illustrate the perversive and misleading influence which these concepts had upon medicine, by citing a very interesting incident in medical history. In 1901, Sir Patrick Manson, when inducted into office as president of the Epidemiological Society of London, delivered an address on " The Etiology of Beri-Beri." In this address, he reviewed and evaluated

the then current theories on the cause of beri-beri. Among these he included the theory of Dr. Eijkman of Batavia, and mentioned specially his experiments in which it was shown that the pericarp of rice, or rice polishings, was effective both in curing and preventing beri-beri. Manson, however, was not impressed by Eijkman's work. "To my mind," Manson said, "the theory which conforms best to all the known facts in respect to the etiology and pathology of beri-beri is to the effect that this disease is purely an intoxication produced by a toxin elaborated by a germ whose nidus is located outside the human body; that in this respect beri-beri is on all fours with alcoholism, the germ of which is the yeast plant, the nidus solutions of sugar, the toxin alcohol, and, to complete the parallel, the pathological effect a peripheral neuritis. There is no evidence to show conclusively that beri-beri can pass directly from man to man like the ordinary infectious disease, yet that it is produced by a living germ is certain . . . ." (17)

What I would particularly call to your attention in this citation is not Manson's failure to appreciate Eijkman's brilliant work, not his insistance on looking for the germ causation of beri-beri, but rather his failure to associate the peripheral neuritis of alcoholism with that of beri-beri as the manifestation of one fundamental physiological disorder. It required thirty-five years to achieve that, and it became possible only because of the renaissance of biological physiology—or, to use more acceptable terminology, by the rise of the science of biochemistry.

This more than any other is the science of the first quarter of our century. F. Gowland Hopkins, eminently qualified to speak on this score, has said, "As a progressive scientific discipline, it (biochemistry) belongs to the present century. From the experimental physiologists of the last century it obtained a charter, and, from a few pioneers of its own, a promise of success; but for the furtherance of its essential aims that century left it but a small inheritance of facts and methods."

From this very same author, we have these most noteworthy observations: "The biochemist, when he aims at describing living systems in his own language, comes in contact with philosophical thought. Current philosophy is busy in emphasizing the truism that the properties of the Whole do not merely summarize but emerge

from the properties of its parts. It is only necessary for the biochemist to remember that his data gain their full significance only when he can relate them with the activities of the organism as a whole." (18)

You are fully aware, I am sure, how much we are indebted to the biochemists. They have made certainties where heretofore we had little more than premonitions and the faint shadows of reality. Their achievements in the spheres of nutrition and endocrinology are best known. Their labors, however, have brilliantly illumed the entire field of medicine even to its most recondite and obscure corners. Physiology has been enfranchised by biochemistry, and many seemingly unsolvable problems in pathology such as arteriosclerosis, the processes of premature and of so called normal senescence, and of the malignant growths, have been reformulated in the knowledge and thought patterns of biochemistry.

Since diagnosis draws its vitality from all departments of medicine, it is natural to expect that biochemistry should exercise a most profound influence on diagnosis. And such is, indeed, the case, not be it noted in the tests which it offers, but rather and precisely where it " comes in contact with philosophical thought." (19)

To sum up our subject; we have seen by the witness of the prize essays described at the beginning of this paper, that the modern practice of diagnosis by means of instrumental precision is little more than one hundred years old. On the other hand, the function of the diagnosis has been subject to a dichotomy of opinion and definition even at the time of Hippocrates. This dichotomy can be described as follows: One school of thought focuses its attention on the morbid process and seeks to deal with it as if it were an entity independent of the affected individual. The second school is concerned primarily with the individual. It looks upon disease as an episode in the life processes of the individual. While the first group generally tends in its therapies to utilize specific curative agents, the second group depends more on the vis medicatrix naturae. In the ancient world, and even up to the seventeenth century, the school of Hippocrates prevailed. Since then, and until the beginning of the twentieth century, that school which considers disease to be specific entities, and hence, the function of diagnosis to be a telling apart of diseases, has held sway. With the twentieth century, there has come into being

the science of biochemistry, giving rise to biological physiology, and validating in a superior wise, the Hippocratic version of the function of diagnosis.

In this paper, I have wandered widely in medical history. I am sure you will not expect me to pass judgments. The castigation of historical periods and personalities is a fatuous sport. I have no intention of setting men or ages in a sort of ascending or descending scale of values. True Hippocratic diagnosis rings more true than does the cellular pathology of Virchow. But for that Hippocrates lived and functioned in a much simpler world.

We can now recognize that the diagnostic minutia of the Cnidian practitioners, derived as they were mainly from variable subjective impressions, could not but seem like so much futility to the clear thinking Hippocrates, who was all too well aware that, "Life is short, the Art long, opportunity fleeting, experience treacherous, judgment difficult."

On the other hand, the empiricism of Hippocratic medicine much diluted and much corrupted in its passage down the ages, could not but prove puerile to a world grown complex and inquisitive.

Weary with the thousand years of scholastic garrulousness, the sciences, medicine included, turned to facts, to demonstrable realities. In medicine, the so called seat of morbidity soon came to light. Morgani found it in the organs, Bichat, in the tissues. Virchow, in the cells. Because of this, disease came to be thought of as a concrete reality and diagnosis as merely the task of identifying that reality. In the last century, diagnosis, like crime detection, developed very clever instruments and technical procedures wherewith to discover and identify the malefactor. Medicine, however, has grown in other directions as well. The humors of Hippocrates have reappeared in new guise, so has the psyche. In consequence, the seat of disease has acquired a meaning like that of "the seat of government" namely as the accidental or arbitrary place whence radiate forces that affect the whole economy.

Time and increment of knowledge have made it possible to reconcile the schools of Cos and Cnidus. But, we must confess, they are not entirely reconciled in the present day practice of diagnosis. While, therefore, we may not find fault with our forefathers, seeing the limitations under which they labored, can we do otherwise than

find fault with those of contemporaries who, in their diagnosis, and perforce in their therapies, still labor within the restrictions of morbid anatomy, and of specific aetiology, and are unwilling or unable to see the function of diagnosis as essentially the definition of a clinical problem affecting a given individual to be solved therapeutically when possible.

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MEDICAL RELIEF IN MEDIEVAL SOUTH INDIA

Centres of Medical Aid and Types of Medical Institutions

Based on Epigraphical Evidences

D. V. S. REDDY, M. B. B. S.
Department of Physiology, Andhra Medical College, Vizagapatam, India

The earliest and most famous epigraphical testimony to the existence of provision for free medical aid to the masses in India belongs to the reign of Asoka the Great (III Century B. C.), whose famous rock edicts engraved in various corners of his vast empire record his solicitude for the health and welfare of his subjects. The second rock edict has been translated as follows:

(a) Everywhere in the dominions of King Devanampriya Priyadarsin, and likewise among (his) borderers, such as the Chodas, the Pandyas, the Satiyaputa, the Ketalaputa, even Tamraparni, the Yona king Antiyaka, and also the kings who are the neighbours of this Antiyaka,—everywhere two (kinds of) medical treatment were established by King Devanampriya Priyadarsin, (viz) medical treatment for men and medical treatment for cattle.

(b) And wherever there were no herbs that are beneficial to men and beneficial to cattle, (everywhere) they were caused to be imported and to be planted.

(c) Wherever there were no roots and fruits, (everywhere) they were caused to be imported and to be planted.

(d) On the roads wells were caused to be dug, and trees were caused to be planted for the use of cattle and men.

Asoka's empire extended over the northern half of South India. His inscriptions also record that the good and humanitarian institutions (for medical aid etc.), were introduced even into neighbouring friendly kingdoms. It may therefore be safely stated that a great part of South India, except the wild and mountainous tracts enjoyed the benefits of the benign rule of the great apostle of Buddhism.

The First Millennium After Christ

The first thousand years after the Christian Era saw the rise and fall of many dynasties and kingdoms in South India. The Satavahanas, the Ikshvakus, the Cheras, the Pandyas and the Pallavas were as great in war as in peace, and patronised art and literature and encouraged the study of Vedas, Vedangas and Sashtras. There is reason to believe that Ayurveda or the science of life and health was originally included under Vedangas. Ancient lists of sciences include certain branches of Ayurveda and sometimes Ayurveda itself. Dhanyakataka and Andhranagara in the north, Kaveripatna and Kanchi in the south must have been not only great centres of learning and merchandise but also places of pilgrimage to the streams of patients seeking relief from a variety of ailments. Pandits and physicians must have adorned the Courts and taught at the Universities of these ancient kingdoms of South India. The literature and inscriptions of this period would appear to have been destroyed to a large extent. The few classical works of South India have not yet been explored by medical historians. The inscriptions of this period are also far and few between and can, at best, supply us with a very fragmentary evidence regarding the nature of medical relief available before 1000 A. D. There is no justification, however, to doubt the presence of physicians and some sort of provision for medical relief even in those days.

Two Scholar Physicians

Two names stand out pre-eminently through the mists of those dark ages. Bodhisatva Nagarjuna, the great propounder of the Mahayana doctrine and the author of many standard works on Alchemy and Medicine, was the head of a University with many distinguished disciples, who spread the message and writings of this Aristotle of Buddhism. Though definite evidence is still lacking, it is believed that he lived in the latter part of the 1st Century or in the middle of the 2nd Century A. D. Some of the medieval medical works mention that the famous prescriptions of this philosopher-physician were engraved on stone pillars set up in the streets of Pataliputra during the hey-day of the Gupta Empire. As he spent

the latter part of his life as a friend, guide and philosopher of a Satavahana King in South India, his teachings and his disciples must have permeated the whole country in the 2nd and 3rd Centuries A. D. We have, even before 1000 A. D., one of the earliest references to a court physician whose name is known to history. Ugradityacharya who was at the court of the Rashtrakuta King, Nripothunga, (first quarter of the 9th Century) was associated with the composition of a still unpublished medical work called Kalyanakaraka. He is also stated to have organised a conference of scholars and physicians of the realm to deliberate and discuss the essentials of a good diet. This great assembly, however, seems to have decided that meat and drink were unnecessary.

Popular Medicine

The Viharas of the Buddhists, the monasteries of the Jains, the temples of the Hindus, some of the earlier religious sects among the Hindus as well as the wandering jogees afforded different types of medical relief to the people. Tree worship and serpent worship, charms, spells and magic, vishavaidyam (toxicology) and bhutavaidyam (mental diseases) were also in vogue. Only the kings and courtiers or the learned section of the society must have had the advantage of treatments by physicians versed in the ancient medical lore and Shastras. The countryside and the masses of people probably depended on the quack physician, the hereditary physician and the barber surgeon.

After 1000 A. D.

The early decades of the 11th century mark the dawn of a new era in the medical history of South India. There is no place for conjecture or doubt, as epigraphy supplies indisputable proofs. The task of the medical historian of the period, subsequent to 1000 A. D., is rendered easy by the discovery of a few but valuable inscriptions not only alluding to the type of the physicians but also furnishing many interesting details connected with the running of the dispensaries and hospitals.

It may be safely stated that there are *not many* inscriptions containing references to physicians and medical institutions in South India in the medieval period. But the few lithic records of medical

interest that have been unearthed up to now are the only available evidences proving the existence of dispensaries and hospitals in South India even before the contact with the culture of Islam and the civilization of European Renaissance. It would be highly interesting, if a full time worker with adequate facilities could be persuaded to undertake a re-examination of some of the epigraphs of South India and to publish a monograph on medical epigraphs of India on the same lines as the monographs of Arata, Blanchard and other European scholars.

I shall content myself by alluding briefly to a few outstanding inscriptions which serve to further stimulate our interest in the matter and also force on us the conclusion that many such inscriptions mentioning or describing hospitals are either irrevocably lost or await further search, discovery and publication.

Medical Institutions in Cities and Villages

The beginning of the 11th Century A. D. was a period of great prosperity and plenty in the delta of the River Cauvery. It was also an age when Hindu society preferred *Dharma* (charity) to the older practices of *Yajna* (sacrifices). Even religious charity aimed at serving human needs. The Royalty, and the representative assemblies of the towns and villages co-operated with the Donors in the foundation of hospitals and maintenance of physicians.

A Hospital in the Chola Capital

As far as our present knowledge extends, the earliest reference to a free dispensary and hospital in South India occurs in inscriptions of the reign of Parakesari Rajendra I (1012-1044 S. D.). Inscription No. 248 of 1923 from *Pandava vadai* alludes to the sale of a piece of land by the big assembly of *Rajakesari catam* to *Alwar Sree Pirantakam Sri Kundavai pirattiyar*, elder sister of Rajaraja the Great, the Chola Emperor. She donated this land for the maintenance of a free dispensary founded by her. Another inscription from the same locality No. 249 of 1923, mentions the sale of a house site to *Alwar Sree Kundavaip pirattiyar* by a resident of Kalakara cheri to make up the deficit in the " Vaidya Bhoga " given by her for the hospital, mentioned in the previous inscription. The hospital was

called " Sundara solavinnagar atula—Salai " and was located at Tanjavur, the flourishing capital of the Cholas. The city was dotted with magnificent palaces and the great temple had just been completed. Inscriptions and literature describe its big bazars (market places) and its beautiful extensions. Undoubtedly, it was the greatest and richest city in South India at that period. The land and the house site which formed the " Vaidya Bhoga " (donation for medical relief) were to be enjoyed by the physicians in charge of the above foundations viz: *Savarnam Araiyam Madhurantakam and his descendants.*

Village Physicians

Inscribed on a wall in the temple of *Gomukteswara* at *Tiruvaditurai* (Tanjore Dt) is a record of the sale of land by the assembly of *Palaya-vanavan-madevi catm* to *Alwar Sri Pirantakam Sri Kundavai-pirattiyar* who conferred it on *Savarnam Araiyan Candrasekharan* alias *Uttama-Cola-acalan and his descendants* as the Physicians of the village. (No. 112 of 1925). Another inscription (No. 18 of 1922) found at Tiruvamattur (South Arcot Dt) records the grant of land for a village doctor by many corporate bodies acting together.

Subsidized Village Hospitals

Even individual physicians seem to have organised a dispensary here and there for the relief of the sick. Occasionally, the good work of the physicians was recognised and rewarded. No. 97 of 1928 registers the remission of taxes on a land sold to *Manadukkiniyan alias Viratarajan of Tevur in Tiruvalendur-nadu,* sub-division of *Rajanarayana-Valandu,* for the maintenance of a combined hospital instituted by him on the northern bank of the river *Mudikonda solapperaru* at *Tirupugulur* and for tending the sick and the destitute. This inscription belongs to the reign of *Parakesarivarma Vikramachola* (1118-1133 A. D.). The remission of taxes was done by the assembly of *Kshtriyanathachaturvedi-mangalam,* which met in the *Naralokaviran-mandapah* in the temple of *Pugalurdeva.*

Hospitals Attached to Temple and Associated Educational Institutions

The most important medical inscription of India is the Tirmukkudal inscription (No. 182 of 1915) belonging to the reign of Chola king, *Rajikesari Veerarajendra* (1063-1069). This inscription is unique in several respects, being the biggest inscription known so far (55ft. long—560 sq. feet in area). In this inscription, are engraved not only the grant to the Hospital attached to the Vishnu temple in Madhurantakam taluk but also the details of the equipment of the Hospital, invaluable information not available from any other source.

This inscription engraved in the east wall of the first prakara of the Vishnu temple of Venkateswara Perumal is composed in Tamil language and alphabet. The characters belong to the latter half of the 11th Century A. D. The inscription is fairly well preserved, though in some places a few letters are badly damaged. Part of the inscription is obstructed by latter constructions. The subject of the inscription is the royal order assigning the taxes of a village for the maintenance of the temple and its associated institutions, a college and a hospital.

The hospital was primarily intended for the treatment of the employees of the temple and the students and teachers in the Vedic school and hostel. It was rightly named after Virasolan, the King of the country, and the patron of the institution. It was therefore a Royal Infirmary. The hospital was provided with 15 beds for in-patients. As the hospital drew its patients from a very limited circle and groups living in the immediate vicinity, there was probably no need for a greater number of beds. Minor ailments and minor injuries would be attended to, by the physician or surgeon and only patients utterly incapacitated or seriously ill would have to be accommodated in the hospital. It is to be much regretted that there is no information regarding the number of out-patients treated in the place, and the names and frequency or incidence of diseases in the locality.

The staff of the hospital must be considered adequate. The Superintendent and the Chief Physician was *Sawarnam Kothandaraman Aswathama Bhattan of Alappakam*. He was paid annually 90 kalam

of paddy and 8 kasu in coin in addition to the income he derived from the land granted to him as a gift. His main duty was to prescribe medicines to the patients lying in the hospital of Virasolan, and also to the servants, teachers, students of the various religious and educational institutions. From our knowledge of ancient and medieval traditions and methods, it may be inferred that this physician also taught *Ayurveda* and trained his descendants and certain other disciples, for the practice of *Ayurveda*.

Besides the physician, there was one surgeon who received 30 kalams of paddy. No details are available regarding either his name or his duties. Next in importance to the physician and the surgeon, came the Pharmacists, fetching medicinal herbs to prepare medicines. There were two such Pharmacists. They were paid annually 60 kalams of paddy and 2 kasu. Two nurses attended on the patients and administered medicines. They were paid 30 kalams of paddy and one kasu. The menial staff of the hospital included a waterman, a barber, each being paid annually 15 kalams of paddy. There are also indications that a cook and a potter were attached to the hospital.

The most instructive part in the epigraph is the 46th line dealing with the medicines to be stocked in the hospital for the year. The information given proves how advanced and almost modern the organization of the hospital was in the *Chola* times. The medical stores of the hospital also appear to have been adequate and representative of the needs of the times and medical fads and fashions of the day. An amount of 40 kasus was provided for purchasing annual supplies, for procuring medicinal herbs and for stocking a certain amount of ghee (required to be kept under the earth annually for *purapasarpi*). The names and quantities of drugs to be stocked in the hospital stores were as follows:—

1 measure of Brahmyam Kadumburi..... exclusive of karungay (nut), 2 measures of Vasa-haritaki, 1 measure of Dasamula-haritaki, 1 measure of Bhallataka-haritaki, 1 measure of Gandiram, 1 tuni of Balakeranda-taila, 1 tuni of Panchaka-taila, 1 tuni of Lasunadyeranda-taila, 1 tuni of Uttamakarnadi-taila, 1 padakku of ..... 1 padakku of Su ..... sa-ghrita, 1 padakku of Bilvadi-ghrita, 2000 Mandukaravatakas, 1 nali of Dravatti, 2000 Vimla, 2000 Sunetri, 2000 Tamradi, 1 tuni and 1 padakku of Vajrakalpa and 1 tuni and 1 padakku of kalyana-lavana.

A detailed discussion of the significance and uses of every one of the above items would be highly instructive but would take up too much space. A separate paper on the subject may therefore be more appropriate.

Provision was also made for the diet to the patients, at the rate of 1 *Nali* of rice per head per day. Another interesting allotment of 2¼ *kasu* was for purchasing 45 *Nali* of oil which was required for a year for a lamp at 1 *Kalaku* per night in order to keep the light burning during the night in the hospital. The total expenditure of the hospital for the year amounted to 365 *kalams* of paddy.

Temple Dispensary

Another temple hospital is mentioned in the Srirangam inscription which is one of the most recent discoveries of the Archeological Department. Srirangam and its temple, situated on an island between the two branches of the Cauvery at Trichinopoly, is an ancient centre of pilgrimage for all the Hindus in general and for Vaishnavites in particular. It is also associated with Ramanuja and other early saints of South India. The temple of Sriranganadha is also justly famous, both for its great extent and its architectural beauties. The exact date of the foundation of this hospital is not known. It is also not possible to state whether the word *Salai* refers to a hospital or only to an out-patient dispensary. The discovery of this inscription stimulated further search and another earlier inscription was also traced. Both are composed in Tamil language and alphabet and are engraved in front of the Dhanvantari shrine at Srirangam. Time may bring to light some more and earlier inscriptions or those containing more details. Of the two now available, the earlier is incomplete. It belongs to the year 1257 A. D and refers to one Garudavahana Bhatta who received a gift and a piece of land for maintaining a *Salai* in the temple. The second inscription, dated 1493 A. D. registers a gift of land made by *Sriranga Garudavahana Bhattan* (*son of Alagiyamanavala Mangaladaraya*) who constructed anew the *arogyasalai* which had been formerly erected by an ancestor of his, named *Garudavahana Bhatta,* in the time of *Pratapa Chakravartin* and had suffered damage during the vanan (foreign in-

vasions). Medical historians are not concerned with this inscription which is, however, important for Sanskrit literary history.

A closer examination of these records gives us an idea of the origin and history of medical institutions of the medieval epoch. The earlier and incomplete record furnishes the following information:

Singanna-Dandanayaka, the PRADHANA of the Hoysala king, partitioned off a portion of the covered corridor (*tirunadaimaligai*) to the west of the *Eduttakai-alagiya-Nayanar*-GOPURA in the fourth PRAKARA of the Ranganatha temple, and converted it into a hall for conducting a SALAI (a hospital). He then purchased 16 and odd VELI of land in *Mummudisola-chaturvedimangalam* in *Vila-nadu*, a subdivision of *Pandikulasani-valanadu* for 1100 VARAHAN-PON and arranged that, from the produce of this fairly extensive block of land, the doctor in charge of the temple-hospital, namely *Garudavahana-Bhatta*, be paid an allowance of 5 KURUNI of paddy per day, his assistant and colleague, Tolmalaiyalagiyar, 3 KURUNI of paddy and two men-attendants (VAIDYA-PARICHARAKAR) 1 TUNI and 1 PADAKKU each, while medicines to the value of 100 KASU per day were prepared.

Mr. Ramanatha Iyer who edited the inscription in the Epigraphica Indica interprets the record in the sense that something in the nature of a private hospital was already being conducted by Garudavahana for a long time and that the Hoysala general, Singanna-Dandanayaka who had personally benefited by this doctor's services, made this munificent donation of land to the hospital in token of his gratitude. I would, however, lay more stress on another aspect. The gift of the general demonstrates his interest and munificence in the matter of medical relief. Probably the new donation created more facilities, supplied more medicines, enhanced the prestige of the physician and helped to relieve the suffering of patients coming from a wider zone than before.

The latter inscription dated 1493 A. D. mentions the following fact:

Srinivasan alias Srreranga Garuda Vahana Bhatta, son of Alagiyamanavala Mangaladarayar of the Bhttal-Kottu, reconstructed the *Arogyasala* to the west of the *Chandra puskarini* (tank) which had been conducted in the past by an ancestor of his named *Garudavahana Bhatta* from the time of *Paratapachakravartin* and which had become dilapidated during the *vanam* consecrated the image of *Dhanvantari Emberuman* (therein) and arranged for the service of (supplying) daily kudinur offering to *Perumal* (god Ranganatha) and for worship of *Dhanvantari Emberuman.* The details of the land,

two veli, on the bank of Kaveri, originally given to the family as *Pallakkum Manyam*, now made over as *tiruvidaiyattam* to *Dhanvantari Emberuman*, for providing worship to *Dhanvantari*.

The Muhammadan invasions alluded to as "vanam" occurred between 1310 and 1328 A. D. The whole country was thrown into a state of anarchy. Towns and villages were sacked and burnt. Temples were destroyed or razed to the ground. During the next century or so, the Patan kings of Delhi sent army after army to plunder and conquer the South. The Kakatiya Empire with its headquarters at Warangal (in the present Nizam's Dominions) broke up; the Hoysala kingdom also suffered a similar fate. Every petty chieftain began to rebel, raise his standards and establish a small state. There was a crop of such mushroom states which went on fighting each other. It was only after the foundation of the Vijayanagar Empire by the brothers, Harihara and Bukka, in 1336 A. D. under the inspiration of the great sage Vidyaranya, that a certain amount of peace and safety was restored. The work of renovating the damaged buildings at Srirangam must have been taken up when the priests and people enjoyed quiet times and happy days with peace of mind, prosperity of the country and leisure to attend to architectural and literary achievements. The turn of the Arogyasala came in 1493, when the hereditary physician of the temple-hospital came forward to do his bit in rehabilitating the damaged building. The physician must have, by this time, accumulated or regained enough property to live in competence and to set apart a portion of his income and property for the benefit of the temple. The institution therefore had, up to that time, a life of at least two and a half centuries.

The Iconographic Importance

Another aspect of the inscription needs to be emphasized. No other inscription from South India refers to the installation of the image of Dhanvantari, the celestial physician, with Amrutakalasam in one hand and Leech in the other, the two representing Medicine and Surgery respectively. According to one tradition, he is the incarnation of the Great Vishnu himself. Sushruta Samhita narrates that Dhanvantari was born on the earth as King of Kasi (Benares)

and that he instructed Sushruta and many other disciples in the Art and Practice of Surgery. During the last thousand years and more, Dhanvantari has been regarded as the presiding deity of the healing art, whose blessings were sought both by the patient and the physicians. It is therefore very natural that the hereditary physician of the Srirangam temple-hospital should have, as a humble follower of the doctrines propounded by Dhanvantari, thought it his duty to construct a shrine for this God of healing by the side of his hospital and endow a plot of land for the daily worship in the shrine. It is not possible, as pointed out by Mr. Ramanatha Iyer, to say definitely whether he constructed this shrine anew or renovated a dilapidated one. According to Koyilolugu, a later chronicle of Srirangam temple, the shrine of *Dhanvantari* was in existence long before the time of Ramanuja (11th century) and that the Saint repaired the already dilapidated shrine and handed it over to his disciple, *Garudavahana,* an ancestor of the physicians referred to in the two inscriptions.

The image in the shrine is described in the following words:

> Is represented as a four-handed image wielding the discus and the conch in the back pair of hands while one of his frontal pair is in the *Abhaya* pose and the other carries his special attribute *Amrutakalasa.*

As shrines of Dhanvantari have not been met with, elsewhere in the temples of South India, this shrine and deity deserve to be widely known.

The Cognomen *Garudavahana Pandita* appears to have been a hereditary title assumed by the successive superintendents of the temple hospital at Srirangam.

Medical Aid Afforded by Monasteries

The Mathas or the monasteries of medieval South India were the exact counterparts of the monasteries of Europe in the same epoch. They were primarily centres of religious sects. As the prestige and power of the Matha depended on the personality, learning and acts of charity of the head of the Matha and also of the intellectual achievements of the disciples, the Mathas soon became centres of learning. Some of the greatest scholars of the age presided over these Mathas. Every branch of knowledge was eagerly studied and taught. It may be presumed that Ayurveda was one of the sciences

studied and taught in these centres. More definite however is the evidence that food and medicines were freely distributed to the poor and the sick. Some of these institutions were enormously big having hundreds and thousands in their fold. What arrangements they had for the treatment of the sick amongst them is not mentioned in the epigraphs. A thorough investigation of the old chronicles of the Mathas may yield some valuable information on the subject. Till then, we must be content with only very fragmentary but valuable clues to the existence of provision for medical relief not only to the inmates of the Mathas but also to the people from the surrounding areas, to the travellers and to the destitutes.

Many inscriptions of the 11th and 12th centuries from the Mysore State make a brief reference to the subject. As typical examples, the following inscriptions may be cited. An inscription dated 1193 A. D. describes the great Rajaguru (priest to the King) Vamasakti Deva " as the tree of plenty to the learned men, proficient in all branches of learning, *devoted to the gifts of food and of medicines and as a master of all kinds of spells,*" while another inscription records the following eulogy: " Skillful in his investigations of all Shastras. *Delighting in the gifts of food and shelter and medicine.*" The Kodia Matha in the Cannada country in the reign of *Bhujabalachakravarthi Thribhuvanamalla-Bijjaladeva Rasa* is described in an inscription dated 1162 A. D. in the following words:

(1) Place of recital of Vedas, Vedangas, for commentaries and Darshanas, for Puranas, Dharmasashtras, all poems, dramas and every other branch of learning.

(2) Place where food is distributed freely to the poor, the destitute, the lame, the blind and the deaf.

(3) *The place for the treatment of the diseases of the destitute and sick persons.*

It is not too much to presume, therefore, that these Mathas ran their own dispensaries, staffed by some of the most learned pandits versed also in Ayurveda, medical botany, pharmacy and charms and spells. The humanitarian spirit that organised and maintained institutions for the blind, the lame and the deaf, the old and the destitute also in medieval India, deserves to be better known than at present.

Hospitals for University Towns

The Agrahara was primarily an educational centre, though a certain amount of religious activity was inevitable. During the Chola and Chalukyan periods, great encouragement was given, by the kings and their relatives, the royal priests and generals, to the promotion of learning in all branches of knowledge. South India was dotted with famous " ghatikas," "Vidyasthanas" and "agraharas." Lands were given for the upkeep of these institutions. Grants of land and gifts were also made to the learned brahmins to enable them to live in comfort and to continue their studies. Free boarding houses were established in these centres for the benefit of the pupils who had to devote themselves exclusively to their studies. Epigraphy has brought to light the existence of such centres about 1000 years ago, near the modern towns of Kanchi, Draksharama and Pithapuri. According to the needs of the times, the changing fashions of the day and the fortunes of the various religious cults, different types of Agraharas with their specific doctrines and emphasis on certain branches of learning, came into existence. Scholars from the North, Pandits from the South either came to these centres for patronage or were imported by the authorities of the educational centre. In some of these Agraharas, there were as many as 100 families of learned brahmins. The student population in the hostels must have also been considerable. The employees connected with an establishment of this size, the artisans, the agriculturists and the manual labourers attached to the village must have been numerous. Sooner or later, need was felt for some sort of provision for medical aid to the population of this educational centre. Thus arose another institution for medical relief viz: the University dispensary and hospital.

The Golagi school attained great power and popularity in the latter half of the 13th Century in South India, particularly during the life of Viswesvarasiva, a great scholar, and the *Dikshaguru* of the Chola, Kalachuri and Kakatiya Kings. This school and many important centres in Andhradesa. One of the inscriptions of this period composed in Sanskrit language but in Telugu alphabet, was found engraved on a huge stone pillar at Malkapuram. It records that Kakatiya king, Ganapatideva, gave away a village and his daughter

queen Rudrama gave another to Visweswarasiva who amalgamated the two villages, established an agrahara called Visweswaragolaki, in which he founded a temple to God Visweswara, a Saiva Matha, a choultry for feeding all classes of persons (from the brahmin down to the pariah), *a general hospital* (*Arogyasala*) *a maternity home* (*Prasutisala*) and a college for the teaching of several branches of Sanskrit learning. The village was peopled by 60 brahmin families imported from the Tamil country. They were well versed in the three Vedas, in grammar, in logic, in general literature and in philosophy. These formed the professorial staff of the College. The village is also said to have had *a physician* among other professions of various descriptions. The chief interest of this inscription lies in the phrase ' Prasutyarogyasala ' which Mr. Ramayya Pantulu, the editor of the inscription interprets as a maternity hospital and a general hospital while I would personally prefer to limit the meaning to a maternity ward. This agrahara was however unique in that it had a maternity hospital in the 13th century. Though no other inscription describing such agraharas mentions the foundation or existence of a hospital or dispensary in the locality, it is only reasonable to suppose that agraharas, at least, the most flourishing ones, had all the amenities and institutions of the model agrahara founded by Visweswarasiva.

Court Physicians

The existence of physicians attached to the royal household and to the king's person is amply proved by a few inscriptions recently discovered. The Royalty gave also abundant encouragement and patronage to the physicians and their families for their service to mankind, rendering free and efficient treatment to the people in need. Queen *Anitalli* of *Rajamahendravaram* granted a village to a brahmin physician *Parahitacharya,* son of *Kalanatha Bhatta* for his skill and ability to cure snake-bites. A copper plate inscription known as *Kaluvacheruvu grant of Anitalli dated 1425 A. D.* provides much interesting information regarding the ancestors of this physician who appear to have been the court physicians of the Reddi Kings of Korukonda in the 14th and 15th centuries. I have evidences to prove that this family of Parahita (meaning doing good to others) was justly famous as physicians from the 13th to the 16th centuries. A

unique Sanskrit manuscript of this period called ' Parahita Samhita ' dealing with various aspects of treatment, is in the Madras Oriental library.

Medical Education

Higher education was generally denominational in character and pursued in colleges attached to temples, and Mathas, or in a few Agraharas (University towns). The Pallis of Jains and the Viharas of Buddhists owned large libraries and transmitted by successive copyings a vast mass of manuscript literature on a variety of topics. There were also some endowments for particular branches of study like grammar, Meemamsa etc. As Prof. Nilakanta Sastry observes, the mediaeval South Indian Colleges have not had the advantage of a full description from the pen of observant foreigners or of being discovered by the archaeologists. But a few inscriptions bear ample testimony of the variety and greatness of some of the centres of learning. There was at Ennayiram (South Arcot Dt) during the reign of Raja Raja I (985-1014 A. D.), a college for higher studies with 270 junior students, 70 senior students and a staff of 14 persons. At Tribhuvani, near Pondicherry flourished another college in the middle of the 11th Century. It had 260 students and 12 teachers. The College at Tirumukkudal has already been mentioned; it had 3 teachers and 40 pupils. The subjects of study were Grammar, Vedanta, Meemamsa, Bhavishya, Taithiriya, Vajaseneya, in some places. In other centres, in addition to the above subjects, Sutras, Epics like Bharata and Ramayana, Shastras like those of Manu etc., were also studied. All of these centres had excellent facilities for undisturbed study. Pupils were provided with food in hostels. Menial servants were allotted for the convenience of teachers and students. Pupils were provided even with mats for sleeping, oil for their heads on Saturday and a light every night. But as far as medical study and medical students are concerned epigraphical evidence occurs only in one inscription i. e. 159 of 1925 belonging to the third year of Vikramachola (1121 A. D.) from Tiruvaduturai. It mentions that among persons who were to be fed in a Matha in that place were students of Medicine and Grammar, learners of *Bahata* (Vagbhata's Astanghahrdaya) Charaka (Charakasamhita). This is however a valuable clue to the popularity and

esteem in which the classics were held even in South India at this period.

Conclusion

Even from the scanty and scattered materials available to us at present in South India, it is evident that dispensaries and hospitals did exist in the medieval epochs in this part of India. The literature of the period and the various chronicles also confirm the existence of these institutions for medical relief. Though big libraries and the private collections of individual scholars and physicians have mostly disappeared during the chaos and confusion of the Muhammadan invasion and the Mogul conquests, the few precious manuscripts now treasured in the libraries of Madras and Tanjore amply prove that there must have been learned physicians in the country versed in the knowledge and rich in experience. The epigraphical evidence examined in this paper indicates, beyound doubt, at least certain types of institutions in the medieval period, the manner in which they were maintained, the nature of the staff provided and even the names and quantities of drugs to be stocked. A country and a civilization which in those dark ages had hospitals attached to temples, dispensaries and infirmeries attached to monasteries (Mathas), a physician, a general ward and a maternity ward attached to the University town, town hospitals as at Tanjavore and private hospitals and royal physicians who rendered free medical aid to the poorest of the poor, may justly be proud of its past and look forward confidently to the future.

ICARIAN MEDICINE *

Etienne Cabet's Utopia and Its French Medical Background

Part II

HERMAN HAUSHEER

The Icarian system of medicine, no longer in a mere stage of therapy, is basically different from all other public health systems for the simple reason that the strategy and tactics of the war against disease are determined by the communist structure of society, which exemplifies a serious application of a definite philosophy of life.

According to Cabet, the means of production, the soil with its riches, the factories and tools, the houses and public buildings, which constitute the wealth of the nation, are so important for the welfare of the people that they cannot be entrusted to single individuals who will exploit them for personal profit. Everything must be owned by society as a whole and operated by society, not for personal gain, but for common use.

The author in reading the various accounts on medicine in the USSR, was struck with no small astonishment that the public health system advocated by Cabet is almost identical with the system of principles in process of being practiced by the Russians.

Icaria like the USSR, is a country which has recognized that the free provision of complete medical service from the moment of conception to the moment of death to all the people is the responsibility of the state.[13] If universal education is considered paramount to the functions of a political democracy, the health of the people is on a par with any of the governmental responsibilities. No society and no social order can function successfully without the physical and mental health of its members.

Icaria is a communistic society which receives from each according to his ability and gives each according to his needs. Instead of being paid for his work in money wages, the working citizen is

* See this *Bulletin*, 1941, Vol. 9, pp. 294-310.

[13] Cabet, E., *Voyage en Icarie* (Paris, 1848). P. 112.

remunerated wholly in terms of socialized wages or services. Cabet, plainly aware that the growing *laissez-faire* economy was definitely retarding the progress of public health reforms, visioned the future of medicine as one properly guaranteed only in a communistic organization of society.[14] It was in keeping with the best standards of the medical profession of his time that Cabet felt it entirely worthy of approval to preserve medicine as a public function and service in the society that alone had ultimately a future. In general, the pioneer American medical educators living around 1840 regarded medicine as a public service, and their ideas about the social aspects of medicine had much in common with those of Cabet and contemporary leaders in socialized medicine.

It cannot be stressed too much that Cabet's medical vision was not created from air. There is nothing fanciful about his medical ideal. He was fairly well acquainted with the stark realities of the public health and the medical organization of his day. His utopia grew by informed contrast out of the actual social situations of historical life. It is essential to pay attention to this fact, in the course of the exposition of his public health system in order to silence once and for all the unfounded assertion that his vision of future society is puerile and ridiculous.

Another typical feature of Icarian and Soviet medicine is that they have done away with the traditional distinction between preventive and curative medicine. The idea of prevention is basic to the entire system of Icarian and Soviet medicine. It is a striking fact that prophylaxis is in the foreground in both Icaria and the USSR. This is part and parcel of the rational and logical attitude embodied by a socialist collective economy. General and specialized medical supervision accompany the individual from birth to death.

Icarian and Soviet medicine readily agree that if one member suffers ill-health the entire social body is affected either directly or indirectly. Hence a genuinely socialized medicine is possible only in a socialist or communist society. The entire medical system in both theory and practice is placed at the disposal of every citizen.

Besides, in Icaria all government agencies are cooperating and laboring toward the identical goal. It finds its *raison d'être,* the

[14] Cabet, E., *op. cit.*, p. 120-121.

rationale of its very existence in the promotion of the welfare of the people. As no class distinctions prevail, the all-important conscious purpose of the state is to improve ceaselessly the material and cultural standard of all, to work indefatigably with single-minded perseverance for the liberation of men from the chains of poverty, ignorance, and disease.

The original resistance to the prophylactic measure of vaccination came first from certain individuals in the medical profession. Most of the early opponents were of the group of specialists whose financial interests were threatened. Their specialty was the practice of inocculation with small pox virus or variolation. They derived their entire income from this source. Obviously, they therefore sought " to discredit vaccination on the basis of possibly valid criticism of the original over-statement of its effectiveness and by exploiting the medical ignorance of the masses of people by creating fear, repulsion and aversion to the innovation. Unscrupulous attempts were made by medical men to frighten the masses away from vaccination: by declaring that new diseases would result from vaccination, that children who are vaccinated develop cow's faces."[15]

Although vested interests in the medical profession immediately opposed vaccination upon its introduction by Jenner in 1798, it was from France that Jenner derived the most flattering proof of his influence. The German physician, J. L. Casper mentions in his work, appearing towards the close of the first decade of the Restoration, that vaccination was fortunately spreading through the efforts of the *Bureau de la vaccination gratuite*.[16] Moreover, there were men like the Duc de la Rochefoucauld-Laincourt, Lasteyrie, Alexandre de Laborde, Benjamin Delessert, and Gérando, who encouraged vaccination and sanitation.[17] Cabet's Icarians, with an eye single toward every kind of advance, not only make good use of vaccination, the acknowledged imported medical contribution;

[15] Stern, Bernhard J., *Social Factors in Medical Progress.* (New York, 1927). Pp. 53-65.

[16] Casper, J. L., *op. cit.*, p. 166.

[17] Artz, F., *France Under the Bourbon Restoration,* 1814-1830. (Cambridge, 1931). P. 292.

but they continued to borrow and discover many other means of disease prevention.[18]

Cabet, too, deserves ungrudging credit for assigning to hygiene a central place in both public and private health. The ideals of the Enlightenment burned in Cabet as they did in Benjamin Franklin, whom he resembles as a representative of the civic virtues. Cabet was a part of the great hygienic movement which belongs to the medical history of the Enlightenment. There was some scattered appreciation of hygiene in France in the early nineteenth century. But it was not until after the appearance of Cabet's *Voyage en Icarie* that treatises on hygiene appeared and the subject was popularized. While there is no book that discusses the hygienic conditions in France between 1800 and 1840 in detail, there are bits of information in the medical literature of the period. That the health conditions were very bad becomes, however, still more evident when we consult the labor situation of the time. To appreciate the revolutionary feature of Cabet's stress on hygiene as the major source of therapy, it is well that we summarize the little that is known about the public health conditions of his day.

Between the revolutions of 1789 and 1848, a span of time embracing Cabet's life until his departure for America, both the living and the working conditions of the workers in the larger cities were thoroughly distressing and very wretched. The employing classes and the government were grossly indifferent to their distress, and the *laissez-faire* doctrine of budding industrial capitalism held by those in power was against all efforts on the part of the state to modify so-called "economic laws." The public authorities were hugely ignorant about hygienic measures. Authorities concur that the most deplorable condition of the toiling workers existed during the Restoration in the textile industry, the most dominant and prosperous industrial activity.[19]

[18] Cabet, E., *op. cit.*, p. 120.

[19] Villeneuve-Bargemont, A., *Économie politique chrétienne* (Paris, 1834); Villermé, L. R., "Memoire sur la mortalité en France, dans la classe aisée et dans la classe indigente," *Mémoires de L'Académie Royale de Médecine* (Paris, 1828); Villermé, L. R., *Tableau de l'état physique et moral des ouvriers employés dans les manufactures de coton, de laine et de soie.* (Paris, 1840); Buret, E., De la misère des classes laborieuses en Angleterre et en France in the work: Wahlen: *Cours*

What attracted the public attention in the growing phase of *laissez-faire* capitalism was, above all, the wholesale employment of women and children. Not that their utilization had not been practiced under the *ancien régime;* but it was then necessarily restricted because of the limited technological equipment of industry. The post-revolutionary expansion and transformation of industrial technology made possible the vaster exploitation of both women and children. The more machine industry expanded its domain, the more the employer resorted to child and female labor. It is incontestable that the marked prosperity of the more mechanized textile industry was the direct result of the overwork of hundreds of thousands of workers at starvation wages, whose docility and passivity seemed boundless.

Moreover, the workshops and working rooms were dreadfully insalubrious. Heaps of dust and repulsive odors made work disgusting. All hygienic measures were absent in the contemporary cotton factories. Labor was performed in the midst of indescribable dirt, and the sunlight could not penetrate these places of misery for lack of windows.

The greatest percentage of the uniformly low wages went for the payment of rent. The living conditions of the industrial workers and the poor in general were frightfully appalling. They were condemned to live below the subsistence level. Their food, a diet deficient in meat and vegetables, consisted of soup, bread, potatoes and milk, which was wholly inadequate in quantity. Large families crowded into damp and ill-ventilated rooms. Cabet spoke of the living quarters of the poor as mere narrow holes, caves, often unheated in winter. Visualizing the material and moral conditions of the society of his day as being typical of the Icaria prior to its politico-social revolution, he pointed out that the poor—for him the term included simply that part of the existing society that was not counted with the aristocrats and wealthy—lived in the towns and capital on loathsome, miry, evil-smelling streets, the running water

D'Économie Politique (Bruxelles, 1843); Levasseur, E., *Histoire des classes ouvrières en France depuis 1789 jusqu'à nos jours* (Paris, 1867); Sée, H. E., *La vie économique de la France sous la monarchie censitaire* (1815-1848). (Paris, 1927); Louis, P., *Histoire de la classe ouvrière en France de la Révolution à nos Jours.* (Paris, 1927).

and cesspools of which were causing avoidable and unnecessary accidents. Villages and farms were often mere piles of dust and smoke in which the people eked out a horrible existence.[20]

The dingy home of the worker and the poor peasant was naturally devoid of any recreational and cultural attractions. Women and children, because of the constant threat of want, were forced to seek employment in the insanitary factories. Children of the tenderest years—Villermé found children as young as four years old working long hours—were employed in large numbers in industrial establishments. As veritable slaves of the greedy entrepreneur they were brutally treated by the guards and forced to work like cattle. Perforce, the unspeakable filth and the gnawing undernourishment prevailing under such circumstances exposed the defenceless victims of the *laissez-faire* economic regime to the certain ravages of disease. It was inevitable that the vicious circle of poverty, drunkenness and crime should be completed by disease. In particular the children working in the ill-paying and over-working mechanically best equipped factories were subject to monstrous mistreatment, degeneration, alcoholism, prostitution and sickness. Infant mortality grew gruesomely high. There was a steady rate of increase in the number of unwanted and illegitimate children. Alban de Villeneuve-Bargemont found industrial worker's families in 1828 lodged in subterranean, narrow, sordid cellars, deprived of air and daylight, in an atmosphere of the most disgusting filth, and where parents, children, sometimes adult brothers and adult sisters used the same bed for rest.

The philanthropists of the time were moved by the irresponsible sufferings of the women and children. The economists and politicians slowly demanded that the existing industrial regime must be so modified as to obviate the decline of production by the improvements in sanitation. The moralists deplored the evident disruption and dislocation of family life. But none of them saw, nor wanted to see, that much more radical measures were needed to cope adequately with the ever-widening acuteness of the social problem.

In fact it was not until within the same year as Cabet's publication of his utopia that Dr. L. R. Villermé came out with a revealing two volume work of medico-moral facts about the textile workers. It

[20] Cabet, E., *op. cit.*, 320-321.

was a devastating account and indictment of the conditions of French textile workers with whose data Cabet could not help but be partially acquainted. The living conditions of the workers in cotton, wool, and silk factories were not one wit better than those of the English industrial laborers. Villermé's work soberly and plainly called attention to the shameful medico-moral consequences of an inhuman industrialism that could no longer be willfully disregarded. Villermé and others did not demand sanitary reforms simply in order to improve factories. They rather urged factory legislation as part of a health reform. Villermé was a medical man who combined humanitarian sentiments with a scientific interest in disease prevention. Being inspired by the general interest in statistics, he made a series of studies in 1828, showing the relationship between localities and disease in different parts of Paris and in the provinces. He was able to prove that morbidity and mortality are partly a function of the living conditions of a given class of people.

Cabet could not help being aware of the woebegone medical neglect of the masses. There exists an extant report of May 30, 1807, throwing some curious light on the occupational diseases at that time. The report mentions the following significant items on the health of tradesmen: " Bakers are almost decrepit at the age of fifty. Few of them live beyond this age. Catarrhs, convulsive asthma and scurvy killed the largest number of bakers between the ages of forty and fifty. The cause of this premature physical decline is lack of sleep, too long exposure to excessive artificial heat, *etc.* The diggers and pavers are subject to vertebral deformation; the painters to colic and enteritis; the masons and plasterers to pulmonary affections caused by the aspiration of volatilized plaster and the manipulation of different kinds of lime. The sedentary life of the shoe-makers, their work posture, the infectious vapor of the large candles with which they light their work, the heat of the stoves, and the smallness of their shops, render them subject to a host of internal and external diseases. The causes of these diseases are still more aggravated by their profound misery. Consumption claims most of them before the age of forty-five. An old shoemaker is a rarity." [21]

[21] Louis, P., *op. cit.*, p. 37-38.

Besides inadequate housing conditions in urban and rural districts, no proper provisions existed for supplying the population with water or with sewage disposal. Private homes of even the better situated middle and upper classes, to say nothing of the mere hovels of the workers, and the public buildings, reeked from offensive unhygienic conditions. In Paris important improvements in sewage disposal were being made in the early decades of the nineteenth century. The comfort stations, called *cabinet d'aisance inodores*, came into existence. Cazeneuve and Donat invented a new sewage disposal equipment called *fosses mobiles inodores*, which came to be profitably used in the manufacture of fertilizers. Moreover, the Paris of Cabet's day had a *conseil de salubrité*, whose aim was to introduce the newest inventions in sewage disposal. Many of the members on this committee were members of the medical profession.[22]

Cabet was unusually hygiene-conscious and in perfect agreement with the technological attempts of his day to cope in some measure with the gross aspects of public health. In sharp contrast with the actual Paris of his time, the capital of Icaria was to be meticulously clean and airy. Conscious that sanitation is the most powerful weapon for the protection of the minimum amount of health of the people, Cabet planned Icara as the model city of the future. Its hospitals and slaughter houses must all be outside the city limits.[23]

In earlier days the cattle were slaughtered within the city walls of Paris. Unfortunately accidents of all kinds were the order of the day. In the second half of the eighteenth century already the plan was proposed to erect the slaughter houses outside the city walls. It was reserved for Napoleon however, to realize this beneficial achievement for Paris at great expense. In 1811 some five *abattoirs* were built. In fact during the greater part of the nineteenth century France led the way in the development of the public *abattoir* system. These huge structures erected in the interest of public health show likewise more than accidental affinity with the similar institutions in Cabet's ideal city.[24] Cabet also lived at a time when a growing number of medical writers voiced their honest opinions regarding

[22] Casper, J. L., *op. cit.*, p. 526-531.
[23] Cabet, E., *op. cit.*, p. 42-43.
[24] Casper, J. L., *op. cit.*, p. 523-524.

the minimum of hygienic needs of both the exterior and interior of the old and newly to be constructed hospitals.

It is well known that in point of cleanliness and administration the numerous new hospitals built in the eighteenth century sank to the lowest level known in the history of medicine. None was a more thriving hot bed of disease then the famous *Hôtel-Dieu*.[25]

While the hospitals remained notorious for uncleanliness and danger to life well into the nineteenth century, a notable change nevertheless took place after the great Revolution. There is at least one medical writer on record who dwells upon this fact. He points out that the decline in the mortality rate is one of the best proofs of said transformation. In support of his contention he alludes to the frightful waste of human life in the *Hospices des enfants trouvés*, during the pre-revolutionary days. From 1670 to 1803, in a period of one hundred and thirty-three years, of 327,429 children only 5193 could be accounted for. Moreover, of 86,000 children from 1774-1790 six out of seven died. After the Revolution, more particularly from 1790 to 1803 six out of ten died, and in 1819 six out of twenty-three.[26]

The three most noted hospitals in Paris which Cabet knew were the *Hôtel-Dieu*, the *Salpêtrière* and *Bicêtre*, all ungainly structures within the walls of the city. Most of the hospitals of Paris had originally been monasteries, orphanages and prisons. The *Hôtel-Dieu* was in the noisiest and darkest city quarter of the capital. But even over a century ago, most of the institutions for the sick, were in the remote suburbs of Paris, away from most of the noise of the center, where there was purer air and a chance for greater rest.[27] Thus Icaria, the capital of Cabet's ideal state, is in more ways than one a truly more ideal Paris, for all hospitals are outside the town limits.

In view of the fact that many of the hospitals of Paris had originally served as convents, orphanages and prisons, they naturally lagged far behind the hospitals of London in architectural beauty and fitness. The hospitals of Icaria remind us therefore of the

[25] Garrison, F. H., *op. cit.*, p. 399-400.
[26] Casper, J. L., *op. cit.*, p. 107, 497-500.
[27] Casper, J. L., *ibid.*, p. 92, 94, 136.

hospitals of London, which we are told excel architecturally even the royal palaces.[28]

Ostensibly, the interiors of the large and small hospitals of Paris were equally inferior to those of London. Most of the former had plastered floors. With poorly equipped windows, excessively high ceilings, the rooms were exposed to too much draft, and thus very difficult to heat. The toilet facilities were wholly inadequate.[29] Small wonder the medical writers invariably call attention to the existence of malodorous low-ceiled rooms of the small hospitals, not only deficient in air and light but badly heated in winter, and made insufferable by mephitic exhalations.[30] By contrast the wards of the London hospitals were not only structurally more ideal; but they were equipped with odorless, hermetically shut closets, named *closet à l'anglaise*.

Baths were an important institution in the Parisian hospitals. However, baths in Cabet's day were largely a purely therapeutic measure, and not primarily a hygienic provision. The following quotation by Professor Bernhard J. Stern confirms our statement: "Adequate toilet facilities, still regarded as incidental luxuries by many builders of homes for workers, were only introduced into the homes of the middle-class late in the nineteenth century. Earlier the bathroom was regarded as a superfluity in the palace of Versailles, and the bathtub was denounced in the United States as an epicurean innovation from England designed to corrupt the democratic simplicity of the Republic. The medical profession warned against it as a producer of rheumatic fevers, inflammatory lungs and all zymotic diseases. Attempts were made to legislate against it. . . . Heavy water rates were levied against those who had bathtubs in Virginia, and a tax of thirty dollars imposed on their possessors in certain towns. When President Filmore installed a bathtub in the White House in 1851, there was an outcry against it as a "monarchical luxury" which could well be dispensed with inasmuch as former Presidents had gotten along without them." [31]

[28] Casper, J. L., *ibid.*, p. 94.

[29] Casper, J. L., *ibid.*, p. 97-98.

[30] Delasiauve, *op. cit.*, ch. 3.

[31] Stern, Bernhard J., "Resistances to the Adoption of Technological Innovations," *Technological Trends and National Policy Including the Social Implications of New Inventions.* (Washington, D. C., 1937). P. 58-59.

Cabet stresses the remedial use of footbaths, an obvious survival of French folk medicine. Hot footbaths are still popular among the people of France. All adults in Icaria are experts in the preparation of the therapeutic footbath.[32]

The hospital St. Louis, where the various forms of medical baths were the cardinal therapeutic measure, was the first building in Paris to install gas light. There were some efforts made on the part of hospitals to freshen the air in the wards by means of specially constructed pumps, similar to bellows.[33]

As nothing is to be done in a haphazard way in Icaria, hospitals are constructed on the basis of a carefully selected plan. They are architecturally huge palace-like structures, located preferably on some elevation, surrounded by well-tended lawns and flower gardens, and properly spaced statues of noted medical men. This is all in evident contrast to the unfavorable architectural and topographical conditions of the old Parisian hospitals. Anyone travelling in Icaria, not unlike in America, has the comfortable feeling that, in case of sudden illness he will anywhere be within reach of a doctor, a hospital, and a nurse, to whom he may trust himself without reservation, a feeling one has in very few, if any European country.

Their interior equally resembles that of a magnificent palace, fully furnished with the most advanced and up-to-date medical and other equipment that absorbs the noises and obviates offensive odors. Every hospital is fitted out with a commodious kitchen, a laundry well stocked with the latest labor-saving devices and cathedral-like baths. Labor-saving devices not only bring the meals and medicines to the bed-ridden patients, but make bathtubs and water available for them.[34] Thus the patients in Icarian hospitals are provided with the best conceivable environment; even music by some invisible mechanism, restful coloration of all objects, and tender perfumes, are provided to brighten the sick, to say nothing of the best of medical and nursing care.

Cabet makes a passing allusion to musical therapeutics, a conception which dates from the remotest antiquity. Both civilized and

[32] Cabet, E., *op. cit.*, p. 114.
[33] Casper, J. L., *op. cit.*, p. 99, 101, 119-121, 126.
[34] Cabet, E., *op. cit.*, p. 111-112, 116-117.

primitive peoples knew of the curative qualities of appropriate music. Not a few of the court physicians in the early modern centuries had experience with the healing effects of music upon their monarchs. It was only toward the close of the eighteenth century that any serious effort to evaluate the precise effects of music on the human body was made. Cabet's allusion to musical therapeutics was in accord with the eighteenth century and contemporary tradition of the physiological theory of musical therapy. Modern science with its exact methods of measuring physiological activities is confirming what innumerable minds have suspected in the course of history that music exerts a profound influence on human health, happiness and efficiency. Later and contemporary scientists have confirmed, for instance, the eighteenth century French composer's Grétry's observation that music is good for the heart and the circulation of the blood. Moreover, psychiatrists have long realized that music is one of the best medicines for the mind. Music is being tested in the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital in Baltimore as a cure for various types of insanity with encouraging results. Music has come into use not only in medicine but also in industry and in the waging of war. Napoleon is said to have attributed his defeat in Russia to the combination of Russian winter and Russian military music. The medical possibilities of music were particularly noticed during the World War. Professor Geo. Stratton, the American psychologist, even went as far as to predict that music may well become an all important part of the nurse's professional equipment.[85]

It is a distinctive feature of the Icarian public health system that only individuals with serious ailments either personally enter or are carefully transported to the public hospitals. But how is one to decide when a disease or accident is in need of medical treatment in the hospital? Hygiene books, written by medical authorities, being well-known in all Icarian families, provide the necessary information. All minor ailments not in immediate need of a physician are treated by the heads of each family, who have had a course in hygiene, and

[85] Diserens, C. M., *The Influence of Music on Behavior.* (Princeton, 1926). P. 100-102; Podolsky, E., *The Doctor Prescribes Music.* (New York, 1939); van de Wall, W., *The Utilization of Music in Prisons and Mental Hospitals.* (New York, 1924); van de Wall, W., *Music in Institutions.* (New York, 1936).

who need only to consult the medical books that are a part of every Icarian home library.[86]

Then, too, every form of hygiene is pushed to its utmost limits. Dental hygiene enjoys a relentless attention. The teeth of the Icarians, from infancy to old age, are diligently examined and cared for, both in the interest of the preservation of the teeth themselves as well as a preventive measure against other diseases.[87]

In Cabet's time dentists and chiropodists were the most conspicuous group of medical quacks. Most of the dentists constituting a large group, were itinerants, seeking to attract clients by the aid of a *bajazzo*, who aside from giving a lurid routine speech about tooth-pulling, performed all sorts of tricks. Notwithstanding the ill-repute of the dentists as a unit, thriving by *sub rosa* efforts, there were pioneers who paved the respectable way of dental science and dental profession. Among the latter was Desirabode, the maker of the most perfect artificial teeth.[88] In the France of Cabet's day false teeth were primarily the affair of goldsmiths, workers in ivory and artisans, who could make the sets themselves. Pierre Fauchard's book *Le Chirurgien Dentiste* marked the beginning of modern dentistry. It was towards France that dentists turned for news of technical improvements.

The dentists of Icaria, unlike the majority of the dentists of the France of Cabet's day, are not mere crafty quacks; they are skilled technicians and scholars as well. They combine professional specialization with a wide and rich culture. This is practically in accord with the behavior pattern of the then skilled medical men, many of whom were well versed in not only the political history of their native land; but also in the literary classics. In their library the works of Voltaire, Molière and Rousseau could be found. In fact no other people have as many poets and literary men among the physicians as have the French.

Dental art and dental science in Icaria have reached an unheard of state of perfection. From early childhood on individuals are conditioned to take daily care of their teeth. Moreover, the dentists, being public servants, and not business men, make frequent pro-

[86] Cabet, E., *op. cit.*, p. 113.
[87] Cabet, E., *ibid.*, p. 114.
[88] Casper, J. L., *op. cit.*, p. 554.
[89] Casper, J. L., *ibid.*, p. 50.

fessional visits among the families of their public health district. Dental prevention and care are so far advanced that loss of teeth and agony of toothache are almost unknown. Dentistry sadly handicapped by a tradition of charlatanism in Cabet's day became completely transformed during the middle decades of the nineteenth century.[40]

Anxious to see the few scattered efforts of preventive medicine strengthened, Cabet visioned a society in which the resolute and successful efforts of sanitary and physical hygiene would equally vie with exertions of mental, moral and social hygiene.[41] Cabet, realizing that *laissez-faire* capitalist medicine was wrong in assuming that disease can be fought successfully by medical staffs alone, permanently mobilized the entire population of his ideal commonwealth in order to both win and preserve health.

Finally, the Icarian public health system is also akin to the health work of Soviet Russia in that all health activities are directed by centralized bodies which plan the health for the entire nation. These co-ordinated medical efforts on the part of the utopian Icarians and the realistic Russians, are still challenging the haphazard and slipshod health work of capitalist countries.

In the USSR, these central bodies are the People's Commissariats of Health. In Icaria the federally appointed Committee of Health organizes the entire public health of the nation. This board is invested with the full authority to manage and control the whole medical service through its centralized institutions and professionally highly skilled and trained medical and administrative personnel.

The Icarian Committee of Health follows in general in its division of labor the political, territorial arrangement of the country. There would thus be some one hundred provincial and one thousand communal subcommittees, all under one inclusive command. Just as a war can only be successfully fought by a unified command, Cabet correctly perceived that the same organization is essential for the success of the medical campaign against disease.

To gauge in some measure simultaneously the advanced quality of Cabet's engrossing medical idealism and its historically concrete basis, it is illuminating to probe some of the general features of French medical organization in the days prior to 1840.

[40] Cabet, E., *op. cit.*, p. 117-118.

[41] Cabet, E., *ibid.*, p. 121.

In the early decades of the nineteenth century one out of seven or some one hundred thousand of the population of Paris were economically so poor that most of the hospitals and hospices of the capital owed their existence to the municipal and state authorities. Besides the publicly administered and charitable institutions, there were a large number of private societies, which provided medical aid to the unfortunate. In the specially designated houses called *sécours à domicile*, the poor received both medical and economic assistance; in the hospital clinics they were offered gratuitous consultations. In each of the twelve municipalities of the city of Paris there was a bureau of charity, to which were attached from twelve to fifteen physicians. They were charged with making professional calls among the poor sick of their district. These offices also dispensed legal aid to the destitute. The most significant fact about the Parisian hospitals, asylums and charitable offices was that they were all under a central management and supervision. This central organization formed the *Administration générale des hôpiteaux et hospices civils de la ville de Paris.* It also acted as a collector of statistical data, knowing exactly how many beds were vacant and occupied in the respective hospitals.[48]

In Icaria all medical institutions are public institutions. There seems to be no wasteful overlapping of health service as a result of the uncoordinated multiplicity of institutions. The medical center of each of the communities in city and country is the hospital with its huge structures. Cabet visioned the municipal management of hospitals as extended throughout the nation.

Rural medical service has and still is in many countries and regions quite uniformly inadequate in quantity as well as in quality as compared with the health services available in urban centers. Comparatively the same situation existed in the early decades of nineteenth century France. Paris was much more advanced in health matters than the rural regions and provinces, although there was a widespread complaint that the bulk of the physicians had a superficial knowledge of their art, that hospital care was quite definitely bad. These criticisms being true, how much worse must have been the medical situation in the country!

[48] Casper, J. L., *op. cit.*, p. 53-77.

"The doctors were not numerous. Where there was a doctor in the village, he found it difficult to collect money for his services. The stingy peasant often refused to consult a physician until his malady was so far advanced that medical attention was of no use. The peasant in sickness preferred to consult a quack who employed old remedies, and who could, if the situation demanded it, use magic formulae." [43] The rural doctor was often the nun who had charge of the convent apothecary shop. Even, today, French peasants still go to a nun because it is cheaper.

Moreover, in those days, the *officiers de santé* assured at least some elementary medical needs in the thatched-roofed rural villages. However, the peasant preferred to call on the bone-setter, sorcerer and quack healer, who, while using charlatan formulae, sometimes still was skillful in curing a fracture.[44]

The bulk of the masses in towns and capital went to the apothecary, who often was an ordinary grocer or spice merchant. Sickness, apt in making people credulous, made them scurry to the apothecary shops, which sold not only tried remedies of tradition but the new blatantly advertized medicines.

Not only were the rural medical needs great; but there were many disadvantages to being a country doctor. Moreover, many of those who practiced medicine in the rural districts were without a license.[45] Lack of proper transportation facilities, complete non-existence of rural hospitals, scientific and medical backwardness of the majority of rural doctors, limited personnel, downright unsuitability of rural homes for care of the sick, all these disabilities conspired to have deplorable consequences for the rural sick.

In radical contrast, Cabet ideally modernizes the medical service of rural Icaria. He constructed rural medical care on the same basic principles as in the cities. Every Icarian community has a central medical institution serving as hospital, pharmaceutical center and as hospice for those invalids and aged who cannot well be taken care of at home.[46] In view of the fact that the Icarian physicians have sel-

[43] Artz, F., *op. cit.*, p. 267.

[44] Weil, G., *La France Sous la Monarchie Constitutionelle*, 1814-1848. (Paris, 1912). P. 128.

[45] Delasiauve, *op. cit.*, p. 38-41.

[46] Cabet, E., *op. cit.*, p. 116.

dom, and then only under extraordinary circumstances, to visit professionally the families of their designated district, the majority of urgent and distant calls coming from the outlying districts, they always have saddle horses at their disposal, whose stable is an essential part of every hospital.[47]

The Icarian hospital is the institutional center of all forms of medical service, where medicine is organized and coordinated, and the invalid is offered everything that is medically possible. In opposition to the prevailing institutional division of the different classes of disease, it also is the center where all gravely ill persons, irrespective of the class of affliction to which they belong, are welcomed, and where they are medically divided. While structural separation of the sick is beneficial with such general classes as skin diseases, children's diseases, surgical cases, epileptics and insane, institutional division of disease has the disadvantage of depriving the medical personnel of a broadening and enrichment of professional experience. Besides, so far as the actual medical situation of Cabet's time is concerned, it made a certain hasty diagnosis and superficiality practically unavoidable. Naturally, the existing backwardness of medical science, the number of poor medical teachers and the notable deficiencies in clinical instruction, all contributed to aggravate this tendency of early nineteenth century French medicine.[48] Moreover, there was the serious handicap that the Parisian institutional division of medical care pursued the policy of refusing admittance to those who did not come within the category of special diseases.

With one notable exception the Icarian medical personnel reminds us of the three kinds of medical personnel in Soviet Russia. The physicians, men and women, general practitioners and specialists, constitute the highest medical staff. Dentists and pharmacists, together with midwives and medical nurses—men and women—represent the middle category of medical workers. The Russian feldsher and his female counterpart, a half-way doctor, are absent in Icaria.

The Russian feldsher reminds us of the French *officier de santé* in Cabet's day, constituting a link in the second order of the medical hierarchy. Delasiauve bitterly complains about these members of

[47] Cabet, E., *ibid.*, p. 114.
[48] Cabet, E., *ibid.*, p. 114; Casper, J. L., *op. cit.*, p. 75-82.

the medical profession. He castigates their lack of literary and scientific training, the reckless acceptance of candidates without regard to their intellectual ability and moral fitness, their almost exclusive non-uniform apprenticeship training. In fact, he regards them as an unprofitable and dishonorable unit of the medical profession.[49]

Cabet, in wisely anticipating the future advance of both medical science and medical education, discontinued in the interest of public welfare the unit of these half-trained physicians.

Midwifery, unlike in the United States, has been a standing institution since time immemorial in all European countries. Midwives or *sages-femmes* in the Paris of Cabet's day were both theoretically and practically trained. Aside from being trained for one year in obstetrics, they were also taught vaccination, blood-letting, and the value of medical herbs. They received their diploma on the basis of examinations.

There was only one public maternity hospital in Paris at that time—the *Hospice de l'accouchement*, with an average annual number of three thousand deliveries. The social history of the prospective mother was not gone into. Moreover, the mother had the privilege of leaving the child after birth with the hospital authorities. All deliveries were performed by midwives under the supervision of a woman administrator and a male medical director. One of the administrative managers was Madame Boivie, the author of competent obstetrical works. Obstetrics was, in Cabet's day, much more highly advanced than the other phases of scientific and applied medicine. Most parturitions were left to nature. Within a decade the hospital prided itself in having had only some one hundred and sixteen artificial births through the use of forceps, perforations, the scission of the *os pubis* and Caesarean operations.[50]

Cabet was a stout proponent of the sexual division of professional work. We shall discuss in detail his views on feminism in the chapter on Icarian morality. Suffice it to say that the sick among the Icarian women are exclusively treated, visited, operated upon and delivered by highly medically trained and skilled women. It is only in unusual cases that the respective woman surgeon or physician

[49] Delasiauve, *op. cit.*, ch. 2 and 4. [50] Casper, J. L., *op. cit.*, p. 488-490.

solicits the aid of a male surgeon or physician. Then, too, there are in Icaria no male midwives as was the case in certain parts of France in Cabet's time. Cabet's opposition to man midwives reminds us of the prudish attitude in English speaking countries prior to 1800, which despite the coarseness of the age viewed the attendance of men at maternity cases as most indelicate. Cabet's view is, however, the direct outcome of his feministic views, and of his zealous consideration of the professional equality of the sexes. Professional obstetrics continued to gain ground, notwithstanding the intrusion of the sex factor. At the end of the eighteenth century and during the first two decades of the nineteenth century several official attempts or plans were made or projected in Magdeburg, Berlin, Strassburg and Vienna, in developing an institution for the instruction of male nurses.[51] In Icaria only women midwives assist in deliveries. The seriously ill of the two sexes are also medically taken care of in two huge separate buildings.[52]

Cabet sagely pleads for another, still extremely relevant medical innovation, that of a universal practice on the part of pregnant women to have the right and opportunity to enter a public hospital for the period of their confinement. There is, in his opinion, no excuse for failure to provide full advantages of medical care and nursing service to prospective mothers. In anticipating Soviet communism, maternity is for Cabet not a misdemeanor, punishable either by summary dismissal from a job, or, as in some cases, by a substantial fine. His advanced conception is that of freeing the woman from her functional expenses and from economic bondage in which the exceptional function, so vital to the survival of the community, is otherwise placing her. Sensing the radical nature of his proposed innovation in medical care, and knowing the well-nigh constitutional conservatism of womanhood, Cabet pictured Icarian women at first repelled by the suggestion, but by diligent public education and progressive enlightenment gradually surmounting all prejudice against the measure planned in their and their offspring's interest and welfare. In other words, Cabet, anticipating Marx, felt

[51] Nutting, M. A. and Dock, L. L., *A History of Nursing.* (New York, 1935). Volume I, p. 537-538.

[52] Cabet, E., *op. cit.*, p. 115.

strongly that science has infinitely more to give if the women are freed from their economic, educational, and professional bondages. In his view this moreover is only adequately possible in a society whose socio-economic regime is communistic.[53]

Those mothers who as a result of unforeseen circumstances are prevented from entering the hospital of their municipality are attended by at least three skilled midwives, who diligently follow the instructions of the woman physician in charge.[54] Whether at the hospital or at home an atmosphere of " religious respect," recalling the love of nature of some of the revolutionary festivals on the part of the deistic theophilanthropists, surrounds the birth of the offspring, which all members of the immediate family anxiously witness.[55] The author is of the firm conviction that this suggestion of Cabet's is still psychologically pertinent today.

The infants are under the immediate medical care of their respective mothers until the age of five. The older children, spending most of their time in school, receive medical treatment either at the school hospital or at the municipal hospital.[56] Cabet's keen interest in maternity welfare, typical of his eighteenth century background, was naturally paralleled by a like ardor in child welfare. Cabet could not be ignorant of the many public hygiene efforts of the century in which he was born, nor was he unmindful of the child hygiene observations of the immortal Rousseau, as a perusal of his social utopia amply confirms. While the Napoleonic wars and the growth of congested factory towns during the Restoration period retarded the former promises of public health welfare, Cabet remained faithful to his eighteenth century heritage.[57]

Again it is appropriate to gauge Cabet's ideal suggestion as to the function of pharmacists in a future society by contrasting it with their actual status in his time.

There were in Paris of the early decades of the nineteenth century both private and public apothecaries. The professional minded medical writers constantly allude to the tragic consequences of the development of the pharmacists into greedy business men. They

[53] Cabet, E., *ibid.*, p. 115-116.
[54] Cabet, E., *ibid.*, p. 116.
[55] Cabet, E., *ibid.*, p. 118.
[56] Cabet, E., *ibid.*, p. 116.
[57] Cabet, E., *ibid.*, p. 116.

repeatedly refer to the fraudulent methods they resort to, to increase their private income. They uniformly abhorred their use of the shady mercantile and advertising methods, their selling of cheap patent medicines at exorbitant prices. While the laws of 1803 and 1805 forbade the advertisement or sale of patent medicine, they could not be enforced.[58] In fact, pharmacy as a profession was still in the juggling and quackery stage. The frequent criticism about the rapid growth of pharmacy as a trade or business enterprise met with in the relevant literature of medical history, seems to indicate that the situation in early nineteenth-century France was such that medical service could not very well be given to the bulk of the people on a commercial basis. But the middle class, having won its economic battle through the Industrial Revolution and its political battle through the French Revolution against feudalism, was able increasingly to subordinate the whole of social and individual life to the personal profit motive, the very soul of business.[59]

As among the other European countries, so in France boards of controlling and distributing drugs existed since early modern times as a prevention against crimes of poisoning. Moreover, the French government freed its public hospitals both from dependence on privately owned pharmacies and from the evident disadvantage of each hospital having to prepare its own medicines. To do so it established the *Pharmacie centrale,* which furnished both the public health institutions of the capital and the provinces with the necessary medical preparations. Thus the central government owned and operated pharmacy and protected its hospitals against the abuse and fraud of private pharmacy establishments. This arrangement was not only several times more economical, but the standard of efficiency and reliability was also so much greater.[60]

In Icaria, as in Cabet's contemporary France, the pharmacist prepared the drugs that medicine required, and worked in part in close cooperation and comparative control of the physician. Hence the central pharmacy of the individual Icarian community with its

[58] Bourgeau, G., *Les Erreurs et les Dangers de la Grande Presse en Matière Médicale.* (Paris, 1916). P. 37-39.

[59] Casper, J. L., *op. cit.*, p. 511-512; 544-550.

[60] Casper, J. L., *ibid.*, p. 515.

laboratory and army of workers, is one of the major subdivisions of the public hospital. Besides filling the orders of the men and women physicians and surgeons of the hospital inmates, it also serves as a distributing center to replenish the pharmaceutical needs of all the individual domestic pharmacies of the municipality.[61]

Then, too, the Icarian pharmacists, formerly mere craftsmen, are now like the physicians, surgeons, dentists and midwives civil servants. Just as the Icarian effort to make dentistry a profession, presupposed a high development of odontology, so the like aim to make a pharmacy a medical speciality presupposed a high development of pharmacology.[62] Furthermore, Cabet fully appreciated that only under a social order in which medical service in any of its forms is emancipated from dependence upon a purely commercial system, is there real hope for the effective control of drugs. The national Committee of Health, consisting largely of representatives of the medical profession, also had charge of the all-national pharmacopoeia.

The medical nurses form the last category of the middle medical personnel. Cabet, as a matter of course, alluded to the fact that in the future society nurses "have all the necessary instruction." Indeed, Cabet's time was part of the " dark age " of sick nursing. The competence of medical attendants was as low in status as the hospitals in which they served. This was a continuance of a tradition that was handed down from the employment of servant nurses in connection with the expansion of hospitals in the previous century. When the French government expelled the religious orders, nursing in larger city hospitals was given over to untrained women, poorly paid and sometimes dissolute.

The *soeurs hospitalières* waited upon the sick in hospitals, hospices, prisons and poorhouses. They acted not only as nurses; but they also did the work in the kitchen, laundry, cellars and storerooms. They often knew more about the condition of their charges than the attending physician. They also managed the apothecary shop, prepared medicines, let blood, and performed all sorts of preliminary surgical skills.[63] Of the religious nursing orders the Augustinian

[61] Cabet, E., *op. cit.*, p. 117.
[62] Cabet. E., *ibid.*, p. 119.
[63] Casper, J. L., *op. cit.*, p. 92.

sisters, who tended the sick in the tragically famous *Hôtel-Dieu* from 651 A. D. to 1908, has had the longest history.

Medical writers are unanimous in their criticism of the low standards in hospital and medical care. In the *Hôtel-Dieu* at times five or six people shared a bed, at times both dead and living. If the medical beds were frightfully unclean, how much worse must the surgical beds have been!

Anticipating that the future society largely functions by professions, Cabet considered all vocations that rest upon prolonged specialized training and enable a particular service to be rendered, as professions. Therefore nursing is in Icaria a profession as well as a civil service.[64]

Nurses in Cabet's France were poorly prepared. This is still relatively true for present-day France. It is only a little over twenty years ago that the *Salpêtrière* in Paris instituted a two years training course for nurses in an effort to improve municipal hospitals.

Only in cases where the nature of the illness requires it, is the patient given a private room in Icaria. Ordinarily all are nursed in large wards. Hospital experience confirms the fact that patients with individual rooms are on the whole psychologically worse off than those in the wards. Hence the provision suggested by Cabet is still quite appropriate.[65]

The whole noble tradition of nursing came down from the Middle Ages. Attempts at better nursing existed in pre-Flieder days as the labors of Mrs. Elizabeth Fry, a Quaker, in behalf of nursing in prisons proves. The historians of medical nursing tell us that the idea of training nurses in a special school originated with Theodore Flieder, pastor of Kaiserswerth on the Rhine, and his wife, He had been influenced by Mrs. Fry when he turned his parish house into an asylum for discharged women prisoners. He next set up in 1836 the church school in which an order of Protestant deaconesses were taught decent nursing. Flieder was almost the same age as Cabet, and a contemporary of his. Cabet could not have remained ignorant of the attempts at better nursing in England and Germany during his exile in London, for the hospitals there had by far better nursing than in contemporary France.

[64] Cabet, E., *op. cit.*, p. 103. 106, 119. [65] Cabet, E., *ibid.*, p. 112.

Cabet made the rather queer suggestion that those who embrace the nursing profession in Icaria are men and women whose bad health disables them to beget and rear healthy offspring for the state. In keeping with his convinced deism, Cabet had no use in his ideal social order for the employment of religious nursing orders. The profession of nursing is exclusively performed by what we may aptly term secular monks and nuns. Surgeons and nurses who in self-defense had developed an amazing apathy to suffering in the absence of anaesthetics and despite the use of soporifics were by contrast ideally pictured by Cabet as embodiments of devoted professional compassion. However, the government must spare no expense to procure for such individuals all the other means of happiness; for Cabet views the chance of married bliss as one of the principal sources of happiness to which men have a natural right and duty to engage in. In compensation for the sacrifice the eugenically unfit men and women are making for patriotic and humanitarian reasons, they are venerated as ministers of a beneficent deity. While Cabet's suggestion of the voluntary abstinence from marriage on the part of the eugenically blighted individuals deserves commendation, his suggestion that individuals who are not enjoying good health make good prospective material for the profession of medical nursing is far-fetched and baseless. Such people could not stand the physical and mental strain of medical nursing. Assuredly, psychologically they would exert anything but a favorable influence upon their charges.[66]

Besides the above discussed categories of the two distinct units of medical workers, there are in Icaria also all the various hospital employees, so essential to the operation of a medical institution. Obviously, the entire hospital personnel lives in the immediate neighborhood of their place of work.

Equally relevant for our day are Cabet's suggestions regarding the working day of the Icarian medical workers. Of all countries it is Soviet Russia alone that had acted upon the spirit inherent in the demands of the fraternity of social idealists. In Icaria the number of medical workers is sufficiently large that none are exposed to excessive professional strain. However, whereas in Icaria the working

[66] Cabet, E., *ibid.*, p. 119.

day of the medical workers, including the orderlies, is uniformly from six to seven hours, the USSR. guided by modern, more advanced health considerations, has assigned to the various categories of medical workers different working days. The working day for physicians has been set from four to six hours; for feldshers, midwives and nurses from four to seven hours; and for the lower medical personnel—hospital employees, orderlies, ambulance-drivers, from six to eight hours. Moreover, the number of working hours depends upon the nature of the occupation. " Thus the medical personnel of psychiatric, tuberculosis, X-ray, and similar institutions, and those working at night have the shortest hours." However, the principle of the shorter working day is not infrequently ignored in consequence of the fact that there are more openings than candidates available.[67]

In the early nineteenth century France the hospital physician, dressed in white apron, made his professional visit at six o'clock in the morning during the summer and an hour later in winter time, assuredly at a most inopportune time as far as the welfare of the patients was concerned. The physician was accompanied on his daily visit by the *externes*, the members of the lower rank of medical students, giving the required surgical assistance. Usually one of their number had charge of recording the ordered changes in diet, while another was writing the new medical prescriptions on a separate bulletin. The physician asked the patients a few general routine questions. Diagnosis was extremely superficial. French physicians had a low European reputation as diagnosticians until well after the masterly advance in the art and science of diagnosis by Laennec.

Diet, together with drug therapy, played a preponderate role in French medical practice. The two principal diets: *régime gras* and *régime maigre*, with the arbitrary subdivisions into one half, one fourth and three-fourths portions, practically constituted the whole repertoire of medically prescribed amounts of food. One medical writer makes the illuminating remark that the French doctor was more passive in the treatment of his patients, principally prescribing changes in diet; while the German and English physician were more aggressive and medical in the treatment of their charges. Humor-

[67] Cabet, E., *ibid.*, p. 113; Sigerist, Henry E., *op. cit.*, p. 136, 150-151.

ously stated: The French let their patients die; while the others kill them.[68]

Instead of the single morning visit of the physician of young Cabet's France, the Icarian physicians regularly visit their patients three or four times daily. In case of unexpected emergency cases there are always enough young doctors in the hospital, who, if the cases require it, can call the particular specialist. The professional visits are made regularly by at least three physicians or surgeons. Moreover, in unusual cases, the entire professional medical personnel of the institution assembles for a collective consultation, pooling their medical insight and experience.[69]

Cabet was convinced that the various generations of professional medical workers, in forming a truly integrated cooperative unit, have a stimulating effect upon both the advance of medical science and the progress of medical art. Such professional cooperation has an immense educational value for both the young physicians and medical students.[70]

Neither were Cabet's views on medical education without a concrete historical background. The Convention had in 1792 at one stroke abolished all the medical faculties and medical colleges of old France. Two years later, the Convention, in which some thirty-nine physicians served,[71] moved the establishment of *Ecoles de santé*, of which three were created. Each district in the republic nominated a student who could be trained gratuitously as an *élève de la patrie*. Falling into line with the posthumous influence of Rousseau's stress on simplicity of habits and equality, the revolutionaries substituted the more democratic title " health-officer " for that of doctor, too reminiscent of the old feudal order. Similarly in Icaria, medical students having passed the final examination, receive the more republican title "national physician" or "national surgeon." Cabet we must remember was a passionate admirer of Robespierrean democracy.[72]

There existed since medieval times a professional divorce between

[68] Casper, J. L., *op. cit.*, p. 82-83, 85.
[69] Cabet, E., *op. cit.*, p. 113. [70] Cabet, E., *op. cit.*, p. 114-115.
[71] Saucerotte, C., *Les Médecins Pendant la Révolution* 1798-1799. (Paris, 1887).
[72] Cabet, E., *op. cit.*, p. 117.

general medicine and surgery. Medical faculties had a disdain for surgery which was viewed as a mere craft. In Paris a similar struggle existed between physicians and apothecaries. This monopolistic rivalry between the various medical services had a retarding effect upon the development of medical research, and put the medical welfare of society in jeopardy. Abolition of the feudal system being one of the major results of the French-Revolution from the social point of view, it likewise broke down the hard and fast distinctions between physicians and surgeons as separate guilds. Unification of medicine and surgery was achieved at one stroke. But even thirty years afterwards observers recorded that the century old conflict between the surgeons and physicians had not yet disappeared.[75] Moreover, professional pressure was exerted by physicians not only to rival groups, but also against regulars who without approval dared to attempt innovations. Small wonder that in the communistic democracy of the future as viewed by Cabet no trace exists of the feudalistic distinction between the members of the medical profession.

Since the great Revolution the members of the French hospital staff were in degree of rank in descending order: ordinary professor, chiefs of clinics, who were doctors of medicine, internes and externes, the last two, medical students who were lucky enough to be initiated into practical medicine. These were appointed by competitive examinations or *concours,* which while temporarily discontinued by the Bourbons after 1821, were soon resumed.

Each year in November the Paris *Administration générale des hôpiteaux* held the *concours* to which all medical students between the ages of eighteen and twenty-four were admitted. A duly sworn examination board, consisting of two physicians and three surgeons, selected by lot, constituted the forum that elected the successfully competing students to *élèves externes.* If they made good in the first year, their appointment was extended two more years. There was also each year a second competitive examination in which the successful externes were elected to the various vacancies among the internes. To obtain an internship one had to have at least two years of medical study, of which one year was an externe. Appointment

[75] Casper, J. L., *op. cit.*, p. 48.

for internship was from two to four years. Obviously, as the openings for internes were fewer, the competition was much more keen. If the externe, competing for an internship failed of election, he could after serving another year in his old capacity, apply a second time for an examination. Were he again unsuccessful, he lost all further claims. Whereas the *élèves internes* received board, room and a yearly income of several hundred francs, the externes received no remuneration of any kind.

Naturally the scope of the hospital duties of these fortunate students was rather strictly defined. The externes dressed and cauterized the wounds of patients, bled them, applied the requisite leeches and in general carried out some of the minor orders of the visiting physician. The duties of the internes were somewhat broader. Aside from supervising the work of the externes, they had charge of eventualities and emergencies. They kept the medical records; acted as assistants in surgical operations, made autopsies and had the general supervision of the sick in the wards.

The chiefs of clinics as fullfledged doctors of medicine had similar duties as the internes and the professors of the medical clinic. They coordinated the records of their observations from the point of a summary of the medical course. They interviewed in advance the newly entered sick persons; transmitted the result of their examination to the professor of the clinic; cooperated in research and participated in the labors of publication.

Cabet, too, perpetuated the principle of competitive examination as essential to the progressive realization of the ideal society. Both consciously and unconsciously, Icarian society would test its members with respect to their suitableness for the performance of a definite social function. As a culturally progressive society, Icaria collectively planned the placing of all its individuals into such positions as would correspond to their abilities. The whole school system with its examinations and supervision of students, is in the eyes of the Icarian planning authorities one of the most reliable, testing and sifting institutions of the intellectual, moral and physical fitness of an individual for the professions. Hence the boys and girls, who upon completion of their undergraduate work wish to become physicians or surgeons must submit to a competitive entrance examination

before they are allowed to pursue their medical studies. The examination reminds us of the *Maturitätsprüfung* of Continental Europe. During attendance at the medical school for five years they are taught so that they acquire a complete survey of the field of medicine and surgery. At the end of this period they again submit to an examination, and being successful, they now specialize in either medicine or surgery for an additional two years. Having again successfully passed the examination at the end of this period, they are permitted to specialize for another year in their chosen specialty. General practitioners have therefore five years, and specialists eight years of medical training.

Cabet's vision of a high standard of medical education reminds one not only of the traditional German plan of a five year course with its large numbers of theoretical lectures, clinics and laboratory work; but also of the latest five year medical course in Soviet Russia, with its aim to achieve the proper balance between lecture and clinical and laboratory work. Obviously, the difference between these two standards of medical education and Cabet's consists in the latter's addition of two and three years more for specialists. Thus Cabet's standard is still utopian. However, the Soviet medical school system seems in a modified manner to approximate it or rather to improve upon it by its singularly pertinent system of post-graduate medical education. According to this plan the physician is given the opportunity of attending a course from three to four months every three years. Moreover, through the system of decades, ten day courses, specialists and general practitioners receive information of new developments in the knowledge and treatment of specific diseases. Whereas all medical education is compulsory in Icaria, post-graduate medical education is not yet compulsory in Soviet Russia. The Soviet system of post-graduate medical education is superior to Cabet's system of medical education in that the practicing physician has need of intermittent retraining. It may be that Cabet opined he had taken care of this evident need by stressing the collective conferences of the entire hospital staff in unusual cases.[74]

It is only upon the successful passing of the four general, progres-

[74] Cabet, E., *op. cit.*, p. 117; Sigerist, Henry E., *op. cit.*, p. 128, 139-140.

sively more specilized examinations, that the Icarian medical student receives the title *médécin national* or *chirurgien national.*

Unlike in the western capitalist countries Icarian medical students are, throughout their studies, protected from economic difficulties. Freed from the shackles of economic necessity, they are able to devote all their energies to their professional studies. Hence no complaints about the length of studies come from the lips of the students. The Icarian government like the USSR, provides the means of subsistence for all medical and other students. It is a common contention of an integrally socialist society, that a student for whatever professional or public function he or she is preparing himself or herself, is performing potentially useful work; and thus the minium that a truly collectivist society can do for him or her is to remunerate him or her by supporting him or her during the years of professional preparation.[75]

Cabet also is full of praise for the visual aids in medical education. He was here imbued with the spirit of the development of the methodology of modern science as well as with the similar views expressed by such different notable educational theorists as Comenius, Rousseau, Pestalozzi and Froebel, the later two being his contemporaries. In Cabet's day visual education was restricted to the use of photographic and lithographic pictures, the diorama, and above all to the museum. In his social utopia, he therefore visions medical education improved by a vaster extension of the museum principle. Most medical schools of contemporary France had small collections of models and preparations. They were uniformly poorly equipped. The anatomical cabinet in Paris was notably inferior to that in Berlin.[76] In violent contrast to the evident meagerness of visual aids of French contemporary medical schools and faculties, the national Committee of Health of ideal Icaria shuns no expense in facilitating medical education by the constructon of anatomical and craniological museums, museums of comparative anatomy and museums of surgery. Ostensibly, the entire field of medicine, biology, and anthropology, together with a recapitulation of their historical

[75] Cabet, E., *ibid.*, p. 117; London, K., *The Seven Soviet Arts.* (New York, 1938). P. 45-46, 48.

[76] Casper, J. L., *op. cit.*, p. 30.

development are pictorially, actually and artifically illustrated for the benefit of the medical students. All fields that have some bearing on both preventive and curative medicine are visually brought to the attention of the students.[77]

Cabet, following the spirit of modern science and anticipating dialectical materialism, views theory and practice as inseparable, neither having scientific meaning without the other. It was this unity of theory and practice that led Cabet to the view that experiment is as important in social science as in natural science. Like his contemporary fellow-utopians he viewed his vision of an ideal society as a theoretical outline of social science that can be scientifically tested by social experimentation.

Realizing that theory and practice mutually condition, supplement, fructify, stimulate and correct each other, the medical students as soon as they are tolerably well along in their theoretical studies, are required to assist in the treatment, operations and medical care of the sick. The customary division of French medical students into *élèves externes* and *élèves internes* is abolished. Obviously here, too the USSR has almost consciously followed Cabet's suggestion. In the Soviet Union the medical student from his second year of study on, has to help in actual nursing and in his next three years the student is likewise engaged in practical medical work at various hospitals, policlinics and ambulatoria, while continuing his medical training.

In order to expedite the spread of the new developments in medical knowledge and practice all the medical workers have full and free access to every conceivable professional and scientific journal. Not only are the individual residence libraries gratuitously stocked with the chief classics; but the various types of professional workers have also all sorts of public library facilities that aid them to keep abreast in their own special field as well as in the general culture of their day.[78]

Probably the most startling feature of Icarian medical science is the universal convention of the post-mortem examination of corpses. The autopsies are held in a suitably large amphitheater in the presence of all the medical students. The necropsy of the individual body is

[77] Cabet, E., *op. cit.*, p. 118.

[78] Cabet, E., *ibid.*, p. 119, 126-127.

usually in charge of the physician or surgeon in whose care the dead person has been. An official report for each autopsy is drawn up, noting briefly all the scientifically useful observations; but without indicating the dead individual's surname. In true Icarian fashion the bodies of dead men and women are exclusively dissected by the respective male and female physicians and surgeons.

Cabet is careful in pointing out how long and arduous was the propaganda work of the health authorities in overcoming popular prejudice against anatomical dissection. But by the irresistible potency of education and formation of enlightened public opinion, the government finally succeeded in convincing every one that his birth, life and death ought to be consecrated for the good of his fellowmen. It was through the nucleus of the first converts, who acted as leaders in the educational campaign, that this rational proposal finally triumphed over prejudice.[79]

There is much to be said in favor of Cabet's revolutionary proposal. From the strictly scientific point of view, it seems advisable to have autopsies of all cadavers performed; but it probably would be difficult to put it into practice as there would not be enough personnel available. Naturally, this objection invalidates neither the rationality of the idea nor the possibility that in the future the health organization of society will find a way to make it practical. Still the point is that a hurried examination may be helpful in ascertaining the cause of death; but if a necropsy is to have a great scientific value, it must be done very thoroughly, including microscopic, chemical, bacteriological and seriological tests.

Cabet's astonishing proposal is as illuminating in what it does not say as in what it says. This becomes especially evident when we look into the contemporary history of anatomical dissection.

A medical innovation such as dissecting cadavers has, like other critical advances, been preceded by a series of preliminary and progressive steps. The practice of dissecting the human body by anatomists was infrequent from the time of the Greeks to the fourteenth and fifteenth centuries, after which the records become numerous. Pathological anatomy, the name of which had not been coined, became suddenly the most definitive aspect of the scientific

[79] Cabet, E., *ibid.*, p. 118-119

study of the etiology of diseases towards the close of the eighteenth century. Medicine in its scientific and practical aspects became jointly emancipated with the other sciences from its sterile metaphysical encrustations and henceforth devoted itself to the free observation of nature. It gradually realized that the study of cadavers would throw light upon a knowledge of the living. This nascent sentiment of the scientific study of bodies received a tremendeous impetus through the eminent French medical scientist Xavier Bichat (1771-1802), who it is said dissected in less than six months six hundred cadavers. It is thus around 1800, during the infancy of Cabet, that the practice of autopsy on a large scale commenced to become general in France.

Medical writers in the succeeding decades were unanimous in their complaints about certain abuses of the practice of dissection among medical students, to say nothing of the serious lack of suitable room to perform anatomical dissection.

Municipal growth in the eighteenth century facilitated by a corresponding growth in transportation necessitated the great extension of hospital facilities. These in turn became significant in the gradual development of clinical teaching, boosting noticeably both medical education and medical research. Paris in particular offered remarkable professional opportunities. Pinel used the hospitals for his studies in mental diseases, and the youthful and amazingly industrious Bichat used them for his necropsies in gross anatomy. Postmortem examinations were routine in Cabet's time. They were performed on an unprecedented scale. By 1830 Paris had no less than thirty hospitals housing some twenty thousand patients, and giving instruction to five thousand medical students.[50]

The hospitals were therefore the precious sources which liberally furnished bodies. As the majority of the hospitals were relatively remote the cadavers were often subjected to disgusting mutilations. Frequently the bodies were even left exposed to the open air in enclosed hospital courts until it was their turn to be examined. Medical students did their anatomical work in separate little pavilions as well as in improperly kept and lighted rooms and amphitheaters. As a rule five students had one body at their disposal.

[50] Fosseyeaux, M., *Paris Médicale en 1830.* (Paris, 1930). P. 97 ff.

Each day bodies for dissection would arrive from the different hospitals. The cadavers were far from being utilized the way they should have been. Casper states that he never had seen such frightful treatment of corpses as in the dissection pavilions and operating rooms of the *Hôpital de la Pitié*.[81] Frequently, even after two or three weeks exposure too many remains of putrefied bodies were left to rot ignominiously on the ill-kept dissection tables. Some of the students did as they pleased with the bodies. Under these conditions it is not at all surprising that autopsies and anatomical dissection in Icaria are to be under the immediate direction and supervision of the physician or surgeon in charge of the dead person when alive. Medical writers in the forties, even after the publication of Cabet's *magnum opus*, revolted against the indiscretion of leaving cadavers to inexperienced students, and advocated the creation of dissecting classes under the enlightened direction of an expert, particularly since students who had been dissecting for two and three years, were still poor anatomists.[82]

Cabet, in alluding to the tremendeous opposition against the universal practice of autopsy and anatomical dissection, typified the varying degrees of the intensity of the antagonism against dissection of the human body from the days of the Greeks to the present. Cabet, however, studiously refrained from indicating the specific social attitudes in opposition to interference with the bodies of the dead, although he could not help being aware of the ignorance as to the purpose of dissection. Moreover, he could not have been ignorant of the startling news that Jeremy Bentham, the father of utilitarianism, had willed his body to a dissector. Bentham had died eight years prior to the publication of his social utopia. He was the first convert and leader against the prevailing prejudice against dissection in England and France. It was only when Burke and Hare systematically murdered fifteen unfortunates in Edinburgh in order to supply subjects for anatomists, such a scandal broke forth as to force reform, making the British Parliament willing to pass its first anatomical act in 1832.[83]

[81] Casper, J. L., *op. cit.*, p. 175.
[82] Casper, J. L., *ibid.*, p. 30; Delasiauve, *op. cit.*, p. 21, 104, 106, 174.
[83] Stern, Bernhard J., *op. cit.*, p. 34-43.

A still more revolutionary proposal in Cabet's medical vision was the wholesale abolition of all cemeteries. He advocated instead the disposal of the dead by cremation.[84]

Democracy of the dead—the real equality of men—is seldom appreciated. However, there is no democracy in the mode of disposal of the survivors' dead kin. Even in death all are treated in the light of the principle of conspicuous consumption. Funerals are a lucrative source of income to morticians, who are economically a liability rather than an asset to a progressive social order. The high cost of dying is exorbitant; hence cremation is state-controlled in Icaria. The author knows of only two countries—Switzerland and the USSR, where the entire cost of burials is state-regulated. In the former country a banker lies next to a laborer in an unostentatious grave, and no man worries about the possibility of going to a pauper's cemetery.

(To be Continued)

[84] Cabet, E., *op. cit.*, p. 119.

BIBLIOGRAPHY OF THE HISTORY OF MEDICINE IN THE UNITED STATES AND CANADA—1940

EDITED BY GENEVIEVE MILLER

The 1940 Bibliography of the History of Medicine in the United States and Canada continues the project of the American Association of the History of Medicine which was started last year when the 1939 Bibliography was published.* This year's list contains 497 items in comparison with 198 items mentioned last year, an increase which may be attributed to the splendid cooperation of the various committee members, each of whom covered a different type of journal. A few changes have been made in the general format and arrangement in order to make the references clearer and to facilitate the reader in finding items which might interest him, e. g. the Biography section has been arranged alphabetically according to subject instead of by author as before. References to articles published in 1939 which were overlooked in last year's list have been incorporated in the 1940 Bibliography.

The reader will notice that obituaries have not been included. They comprise a very extensive literature which would be difficult to collect in its entirety with the limited facilities available. For such items it was felt that the *Quarterly Cumulative Index Medicus* may be used with great advantage.

In a few cases the references will be found to be incomplete because the reprints submitted to us contained no pagination. When journals were not available to check the references and time did not permit us to obtain them from other sources, we simply printed whatever information we had. There are also inconsistencies in the notation of portraits, illustrations, etc. which will be corrected in the future.

We are greatly endebted to the various committee members for the cooperation which they have shown: Dr. Richard H. Shryock, Chair-

* *Bulletin of the History of Medicine*, 1940, Vol. 8, pp. 619-635.

man, and Mr. Morris C. Leikind, who covered general historical journals; Dr. B. W. Weinberger, who surveyed the dental literature; and especially Miss Elizabeth A. Schramm, who contributed an enormous number of items carefully selected from dozens of medical journals. With her help we also obtained the cooperation of Miss Eva R. Hawkins of the National Health Library in New York who sent us references on nursing, and who will cover the fields of nursing, public health and preventive medicine in the future. We are also most grateful for the help rendered by various librarians and other members of the American Association of the History of Medicine, Mrs. Florence A. Cooksley, Miss Janet Doe, Dr. W. B. McDaniel, 2d, Dr. Claudius F. Mayer, Dr. Samuel X. Radbill, Dr. Max E. Soifer, Dr. Walter R. Steiner and Dr. Henry R. Viets, who added many items to the preliminary list which was submitted to them. Lt. Col. Edgar Erskine Hume very kindly filled in large gaps in the history of military medicine, and we are happy to announce that he has consented to cover that field in the future. It is hoped that eventually all aspects of American medical history will be thoroughly covered by key people in each field.

We are most anxious to make the Bibliography as complete and as useful as possible, and we would greatly appreciate any suggestions or criticisms from readers of the *Bulletin*. So far we have only made a beginning. It would be a tremendous help to us if all of you who write articles on some aspect of American medical history during 1941 and hereafter would send reprints of those articles to the Institute of the History of Medicine, 1900 E. Monument Street, Baltimore, Md. In this way we would be certain to include them in the annual Bibliographies.

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ALEXANDRE RICORD'S DISSERTATION OF 1824

HENRY E. SIGERIST

Alexandre Ricord's father was a ship-owner of the Compagnie des Indes. He left France as soon as the Revolution broke out, or possibly even before, and went to America, to Guadeloupe first and from there to Baltimore where he arrived in 1790.[1] He already had a son, Jean Baptiste Ricord, born in Paris in 1777. Jean Baptiste became a distinguished physician and naturalist. He married Elizabeth Stryker, descendant of a New Amsterdam family, and had a son, Frederick William (1819-1897) who became a well-known man of letters and public official in New Jersey. Jean Baptiste died in 1827 in the West Indies.

Alexandre Ricord, the author of our dissertation and brother of Jean Baptiste, was born in Baltimore in 1798 and two years later on December 10, 1800 the youngest son of the family, Philippe, was born, in Baltimore also.

The three Ricord brothers all studied medicine as their grandfather had done. Jean Baptiste's and Alexandre's chief interests, however, were in natural history while Philippe made a remarkable medical career in Paris. A student of Dupuytren, he was appointed Surgeon-in-chief for syphilis at the Hôpital du Midi in 1831 and became the leading syphilologist of the time.

Alexandre made his career in France also. He went to Paris in order to study medicine and stayed there after graduating in 1824.

Dr. Harry Friedenwald, a warm friend of our Institute who never comes with empty hands, very kindly presented us with a copy of Ricord's inaugural dissertation. The title is: *Dissertation sur quelques points de médecine pratique; Présentée et soutenue à la Faculté*

[1] Concerning the Ricord family see *Nouvelle Biographie Générale*, Vol. 42, Paris 1863, col. 267.—Kelly and Burrage, *Dictionary of American Medical Biography*, New York, London, 1928, p. 1036 f.—*Dictionary of American Biography*, Vol. XV, New York, 1935, p. 587 f. There is some confusion of dates in the various dictionaries.

de Médecine de Paris, le 20 août 1824; Par Alexandre Ricord, Docteur en Médecine.[2]

The dissertation is dedicated: A mon frère, J. B. Ricord Madianna, Docteur en médecine de l'université de New-York; Membre de plusieurs Sociétés savantes d'Europe et d'Amérique. A mon frère, Philippe Ricord, Ex-Pharmacien militaire, Élève de première classe de l'école pratique; Chirurgien interne de première classe des hôpitaux et hospices civils de Paris, etc. A mon estimable ami et cher collègue, Joseph-François-Marie Rodriguez, (De Canarie.) Docteur en médecine et en chirurgie de la Faculté de Paris, etc., etc.

Jean Baptiste Ricord has the name Madianna added to his family name. According to Kelly and Burrage (l. c.) Madianna was the name of Ricord's homestead in France and he signed many of his writings in this way.

Alexandre seems not to have been enthusiastic about the obligation of presenting a dissertation. He states it quite clearly in the preface:

Avant-Propos.

Cédant à la nécessité, et remplissant un devoir qui m'est imposé, je présente aujourd'hui une thèse. Mais vais-je mieux faire que ce qui a été fait avant moi? ou bien vais-je offrir quelque chose de neuf? L'une ou l'autre de ces deux conditions est bien difficile à remplir; et le champ de la science, quoique fertile, a déjà été si bien moissonné par des mains heureuses et savantes, que les miennes, encore faibles et peu accoutumées au travail, y glaneront peut-être sans être récompensées de leur peine. Quoi qu'il en soit, je vais remplir ma tâche, en réclamant toutefois l'indulgence de mes juges.

Quelques points de médecine pratique font le sujet de ma dissertation. Si j'ai mal fait, qu'on se rappelle que ma faute n'est pas volontaire, et que je n'ai écrit que parce qu'il fallait écrire.

The dissertation is as brief as can be. It contains only 20 pages and discusses only four points of practical medicine in a rather cursory way. But it is mostly based on Ricord's own observations and on experiences gathered in America, so that to the reader it must have had a certain exotic flavor.

The first point deals: *De la piqûre des insectes venimeux, particulièrement de celle du scorpion de Sainte-Lucie, réputée mortelle par*

[2] The dissertation was printed: A Paris, de l'Imprimerie de Didot le Jeune, Imprimeur de la Faculté de Médecine, rue des Maçons-Sorbonne, nº 13. 1824.

les habitans de cette île, et de l'utilité de la teinture de cantharides et du laudanum liquide de Sydenham pour la guérison des accidens qui en résultent.

Ricord was a passionate hunter, and while hunting in the forests of America he was frequently stung by insects. He found that it was not the sting that caused the violent pain, because if you removed it the pain still persisted. The cause was rather an irritant liquid which entered the skin with the sting. Ricord devised the following method of removing the substance. Whenever he was stung he immediately applied one or several drops of tincture of cantharides. The result was a violent blistering inflammation that not only prevented the absorption of the venom but, through the secretion it caused, drove the poison out and with it the sting. He then opened the blister, removed the epidermis, and applied laudanum to relieve the pain. Finally he covered the wound with gold-beaters' skin (baudruche)[3] which he attached with fish-glue (ichthyocole).

From then on he never went hunting without a bottle of tincture of cantharides and laudanum, and he was no longer afraid of insects.

Once, on a trip to the island of Saint Lucia in the West Indies Ricord made experiments with his remedy on scorpion bites. A rat bitten by a scorpion died within 6 hours. Another rat bitten in the same way survived after it had been treated with the tincture of cantharides. Soon thereafter a young negress was bitten by a scorpion. She was suffering intense pain when Ricord saw her. After application of the tincture the pains disappeared in less than 15 minutes and the patient had no evil effects.

Ricord's conclusion was that insect bites should never be treated internally but locally in the indicated way.

The tincture made from cantharides or Spanish flies was a very popular remedy used from Hippocratic days on as a local irritant in the treatment of a variety of ailments. Taken internally it has a strong irritant action on the genito-urinary tract and was used for centuries as an aphrodisiac.[4]

[3] Baudruche, or gold-beaters' skin, was made from the outer coat of the caecum of the ox and was frequently used for covering wounds.

[4] I cannot resist the temptation to quote from the *Dictionnaire des Sciences Médicales*, a learned encyclopedia of medicine, published in the beginning of the

Laudanum, an opium tincture, was in those days usually made after the prescription of Sydenham:[5]

Sherry wine		1 pound
Opium		2 ounces
Saffron		1 ounce
Powder of cinnamon	$\overline{aa}$	1 ounce
" " cloves		

The second note describes the syphilis treatment of Dupuytren. Guillaume Dupuytren (1778-1835) was at that time the leading surgeon of the Hôtel-Dieu. A hard worker but extremely ambitious, conceited and vain, he wrote little himself and preferred to have his students describe his treatments. Thus he could speak of himself in the third person which, as Malgaigne said, " stands praise better than the first person."[6] And besides he could always disclaim a statement if he found it opportune to do so.

The syphilis treatment described by Ricord combined mercury with sudorific and narcotic drugs. It seemed highly suitable to combat " the most recent as well as the most inveterate and recalcitrant venereal disease."

The patient was given three times a day, in the morning, at noon and in the evening, at least one hour before meals a pill containing

19th century by a group of physicians that included the most famous names of the day. The passage taken from the article *Cantharide* (Vol. 4, 1813, p. 19) shows that an encyclopedia is not necessarily arid, but can be written in a most poetic style:

" Une des plus belles attributions du système nerveux est, sans contredit, de présider à la reproduction. Les organes destinés à cette admirable fonction, doivent à leur texture, presque toute nerveuse, ces élans délicieux de la volupté qui entrainent irrésistiblement un sexe vers l'autre. Ce penchant qui va jusqu'à la fureur chez certains individus, s'affaiblit et s'éteint chez quelques autres, de manière à laisser leur coeur fermé à la passion la plus douce: on dirait que la plus charmante moitié de l'espèce humaine n'existe plus pour eux. Cette affligeante asthénie n'est pas toujours désespérée; elle cède par fois aux moyens thérapeutiques spécialement destinés à stimuler les organes génitaux languissans. Ces moyens, dont l'emploi judicieux des cantharides est certainement un des plus énergiques, sont connus sous le nom d'*aphrodisiaques*."

[5] See *The Works of Thomas Sydenham*, Trans. by R. G. Latham, London (Sydenham Society), 1848, Vol. I, p. xcix.

[6] *Nouvelle Biographie Générale*, Vol. XV, Paris 1856, col. 396.

Extract of Guaiac	¼ grain
Extract of China-root	¼ grain
Aqueous extract of Opium	¼ grain
Bichloride of Mercury	⅙ grain
Starch q. s.	

The pills had to be fresh. After each pill the patient drank a glass of the following decoction

China-root	āā	½ ounce
Sarsaparilla		
Guaiac		
Water		2 pounds

which was boiled until it was reduced by one-third. To the morning and evening glass was added 2 ounces of sudorific syrup.[7]

The treatment must be continued long after the symptoms have disappeared. In inveterate cases the after-treatment must be given for just as much time as was required to eliminate the symptoms.

The third very short observation concerned a patient who was complaining of anaphrodisia. The case history revealed that he was employed in a drug store and slept in a back room on bales that contained camphor. His complaint had developed since he slept under such conditions.

Ricord advised the patient to sleep in a well ventilated room whereupon sexual desire and potency were restored in a few days. From then on Ricord used camphor vapours in the treatment of priapism, gonorrhoea, satyriasis and nymphomania. Esquirol had used camphor internally in the treatment of hysteria, but the internal application affected the stomach and could even result in poisoning. Ricord

[7] According to the *Dictionnaire des Sciences Médicales*, (Vol. 53, Paris 1821, p. 160 f.), sudorific syrup was made in this way: (1) Take 1 pound each of sarsaparilla and guaiac, 12 pounds of water. Infuse on hot ashes for 24 hours, reduce to one-half by boiling very slowly, strain and add 1½ pounds each of cassonade and honey, or 3 pounds of cassonade alone. Boil this until it reaches the consistency of a syrup. (2) Take 1 pound of sarsaparilla macerated for one day in 6 pounds of water, boil it on a low fire 4 hours, decant, repeat the operation until the extractive part of the sarsaparilla is exhausted. Mix the decoctions together, add 2 pounds of sugar, clarify and let it boil to the consistency of syrup.

therefore recommended that such patients be kept in apartments where camphor was evaporating.

The fourth and last section of the dissertation deals with *seasickness*, a disease from which Ricord himself suffered repeatedly. As immediate causes he considered the evil smell of the ship—due to tar or to the cargo—and the motion of the ship. Indirect contributing causes were the changed mode of living, a depressed state of mind, humidity, etc. He then described the well-known symptoms and stated that similar symptoms occurred in persons riding backwards in a carriage.

Prophylactically sea travellers should try to become accustomed in advance to the smell of tar which they could do by carrying a small piece of tarred rope around for some time. They should not take a boat that has a cargo of sugar or hides, or similar substances that have a nauseating smell. Once on board they should live on deck and avoid the interior of the boat that is always damp and hot and where the smell is strongest. Good drinking water is also important.

As to the treatment, most of the innumerable remedies recommended fail. Yet there are some that have real advantages. Psychological factors are important. People should be treated very gently. All kinds of entertainments, music among others, are good. Violent emotions can stop the disease suddenly, as Ricord experienced himself.

Once while sailing from Sainte-Marie to Pointe-à-Pître along the coast of Guadeloupe, he was frightfully seasick, vomiting all the time. The boat suddenly ran aground on a rock about a mile from the small island called Ilette à Cochon. The colored crew immediately jumped into the water and swam to shore, abandoning Ricord who could not swim. In this desperate situation he suddenly lost his seasickness and acted as cooly as if he had never been ill. Tying himself to the wreck, he let himself be driven to the shore by wind and waves. And another surprise was in store for him. At the time of the accident he had been suffering for the last six months from a tertian fever that would not yield to any treatment. His next attack was due an hour after he had been rescued, but although he had to stay in wet clothes for a long time, the attack never came and he was cured of his fever.

Ricord found two remedies effective against seasickness. One was compression of the abdomen by means of a broad belt or girdle, a measure already recommended by various writers. He drew attention to the fact that such belts were worn by the Dutch and by Mediterranean fishermen.

The other remedy was opium taken three times a day in increasing doses up to one and a half grains in 24 hours. In between he drank an infusion of sassafras, very hot, with sugar.

Ricord's dissertation is a very slight contribution to medicine which he himself did not take all too seriously. I have mentioned it because it adds to the biography of a native son of Baltimore who was a member of a most distinguished medical family and who became a noted scientist himself. Short as the dissertation is, it reveals the mind of a man who observed nature without prejudice and drew conclusions from his observations.

THE STORY OF ST. BONIFACE HOSPITAL AT ST. LOUIS *

ROBERT E. SCHLUETER

The origin of St. Boniface Hospital began with the following letter:

Carondelet, October 1871

Reverend E. A. Schindel

Dear Sir:

The undersigned beg to submit to your consideration the propriety of establishing, in this part of our city a hospital under such auspices as you may deem best and most expedient.

The many late accidents, in our midst, among the employees of the railroad as well as of the foundries and furnaces, the constant increase of this class of men—most of whom without family and without facility for relief or comfort in case of accident or sickness, most urgently appeal to our humanity and demand that proper steps be taken to accomplish this object.

Knowing that the matter is best placed and intrusted into your hands, we herewith beg leave to do so, promising that we will cheerfully render all assistance which may lay in our power.

Yours most respectfully,

Henry Doering	Fred Ahrens
A. L. Bergfeld	Francis Zeller
H. J. Hinsmann	Antoine Lobsinger
Charles Spies	A. H. Meyerpeter
Henry Nagel	

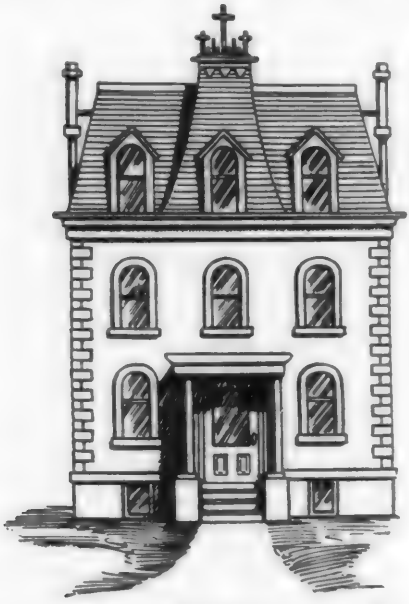
Father Ernst Andrew Schindel of St. Boniface Catholic Church entered into the founding of a hospital with great enthusiasm and submitted the matter to Archbishop Kenrick who did not object to the undertaking.

Father Schindel then wrote to his godfather, Mr. Ernst Andrew Helweg, of Muenster, Germany, who spoke to the Right Reverend Conrad Martin, Bishop of Paderborn, in Westphalia, Germany, in which province Father Schindel was born. His Lordship recommended to the Mother General of the Franciscan Sisters of Salzkotten, Westphalia to accept this missionary work. Accordingly

* Read before the Faculty Seminar at St. Louis University School of Medicine on December 12, 1940.

three sisters of that order, Sisters Philomena Oldegeering, Mary Dorothea and Alphonsa Cormann, sailed for America on December 3, 1872, accompanied by Father Schindel's friend, the Reverend Father H. Brockhagen.

After a long and tiresome journey they arrived in Carondelet (South St. Louis), where Father Schindel made arrangements for



St. Boniface Hospital, Carondelet, Mo.

them to live with the Sisters of Notre Dame in their Convent on South Broadway near the Jefferson Barracks. They occupied their time studying the English language, begging alms, and soliciting funds for the new hospital in which they were to live and work; going even into neighboring States as far as Cincinnati, Ohio. Meanwhile Father Schindel was not idle in raising funds for what was to be a large and perfected hospital.

He organized a concert for the benefit of the hospital in Sep-

tember 1872 and late in the same year organized a grand lottery the prizes of which were twelve fifty foot building lots comprising the whole city block between 4th Street (now Michigan Ave.) and 5th Street (now Virgina Avenue) bounded by St. Louis Street (now Nagel Avenue) on the South and Randolph Street (now Blow St.) on the north. Father Schindel owned this ground and intended to build the hospital on it; however, this plan was abandoned because the neighbors objected. The raffle took place at a picnic held on July 4, 1873, but further details of it are not at hand except the raffle ticket No. 79319 on the reverse of which a plan of that block of building lots may be seen. On its face is an architect's sketch of a very pretentious structure. There are five pavilions in a row with connecting corridors but only the central administration building was ever built (see illustration) in a grove of trees outside the town limits on South Grand Ave. and Bayless Ave. just west of the Lemay Ferry Road. This area has been long since known and still bears the name of Risch's Grove, of which the present owner's name is McNerney. There the one pavilion of the hospital was completed and solemnly dedicated on September 7, 1873, by the Very Reverend Father Henry Muehlsiepen, Vicar General of the Diocese. The first patients were admitted on September 14, 1873, and the Sisters attended patients in the institution but, for the most part, they nursed patients in their own homes because of the general dread which many people had for hospitals.

While the preparations for the erection of a hospital were in progress it is amazing how the several coordinated influences were at work. In the summer of 1873 Father Schindel undertook a personal journey to Salzkotten for a conference with the Mother General. This resulted in eight additional consecrated sisters returning with him, so that there were eleven able bodied and enthusiastic young women on hand before the hospital were completed.

The hospital was situated in a large park and there was a vegetable garden as well as an orchard. Yet to offset these values and beauties there was a creek near it to which much of the continuous sickness among the eleven sisters was attributed. Furthermore, they depended upon well water for cooking, drinking and washing. This probably also contributed to the morbidity of the sisters. Still none of them

died, but the Mother General learned of their plight and she missioned eight more nuns from Germany to the community. They arrived at Carondelet on August 1, 1875.

This gave impetus to the work because the work could now be divided as the newcomers, like those who had arrived earlier became accustomed to the American manners and mode of living. There were also a number of applications from American girls who could serve in the parochial and industrial schools in addition to caring for patients.

The first field of labor outside of the St. Louis area came to the Franciscan Sisters in September 1875, when three of them set out for Cape Girardeau, Missouri to establish what is now the splendid St. Francis Hospital there. Their early endeavors included teaching in a parochial school, which entailed considerable obstacles, mostly because they were well educated in the German language, but lacked a working knowledge of English. Despite the assistance given by the Loretto Sisters, the educational activities of the Franciscan Sisters was considerably curtailed, and diverted them from the services which they aimed to render to suffering humanity. A description of their trials and tribulations in the Mississippi Valley of the United States of North America during those few years in the middle of the 1870's could be elaborated upon and expanded into a large book. Then, while those good Franciscan women were struggling with poverty, a language new to them, and many other adverse conditions, amid strange surroundings in a foreign land the saddest and most tragic occurrence in the history of the Order of Franciscan Sisters of Salzkotten, Westphalia, Germany, happened.

On Sunday the 5th day of December 1875 five professed members of the order of Franciscan Sisters sailed from Bremerhaven, Germany, at the mouth of the Weser River, on the ill-fated steamship "Deutschland." 115 passengers embarked in fair weather but a violent storm arose as soon as the deep sea was reached. The blizzard became fiercer as the night progressed until the next morning, while most of the passengers were still trying to sleep, there occurred the terrific crash of the shipwreck in which more than fifty persons died. All persons were ordered on deck and told to wear life preservers. The temperature fell to 10 degrees below zero as the

storm raged all day only to become worse toward evening. The wild waves dashed over the ship and flooded the cabins so that four sisters were drowned in their cabin, while the fifth was washed overboard to a watery grave in the icy waves.

When Cardinal Manning in London heard the sad news he sent two Franciscan Fathers to Harwich where the bodies had been taken to shore. The Reverend Father Thomas, O. F. M. took charge of the remains of the four nuns and had them removed to the Convent at Stratford-on-Avon.

On the morning of December 13, 1875 the little church at Stratford was filled to overflowing by both Catholics and Non-Catholics for the solemn requiem mass offered for the departed souls.

Just before the commencement of the services His Eminence Henry Edward Cardinal Manning (1808-1892), invested in full canonical robes and accompanied by Mgr. Searle entered the church, uttered a silent prayer and ascended his throne. After the last gospel His Eminence still attired in his official raiment, ordered the lids of each casket removed and viewed the mild and patient expression of every countenance separately and proceeded to deliver an appropriate eulogy in which he glorified the courage and self-sacrifice of those Sisters. His Eminence then pronounced the absolution and everybody in attendance took turns at viewing the remains.

The burial took place in Leytenstone Cemetery where the Rev. J. Jansen placed a cross of flowers on each casket and the Rev. Father Francis, O. F. M. performed the last rites. A modest tombstone marks their resting place and the names of all five sisters appear in the inscription on the gravestone which reads as follows:

"Pray for the souls of

Barbara Huetenschmidt
Henrica Fassbender
Norberta Reinkober
Aurea Badsiura
Brigitta Damhorst

Franciscan Sisters from Germany,

who were drowned near Harwich in the wreck
of the 'Deutschland' on December 7, 1875,
Four of which were buried here December 13.

"R. I. P."

The afore related tragedy might have been a deterrent factor for a less resolute group of individuals than were these true successors of Sainte Clara, the first female associate of the Great St. Francis of Assisi. Less than six months after that disastrous shipwreck, the head authorities of the Sisters sent the amiable and experienced Venerable Sister Bernarda Passmann to be the first Provincial Superioress in America after she had proved her ability as Superioress of the academy hospital at Metz in Lorraine (Lothringen) Germany. Under her guidance the several missionary works of the Sisters grew continuously until the sudden destruction of St. Boniface Hospital.

During a thunderstorm on a warm summer morning on August 6, 1877, the building of St. Boniface Hospital was struck by lightning and burnt to the ground, fortunately without the loss of a single life.

With the aid of ambulatory patients and neighbors everybody was temporarily saved, which was phenomenal in the face of the primitive fire fighting of the eighteen seventies. The sisters and patients were transferred to Gillick's Hall, at Michigan Avenue and Stein Street, until the sick were able to go to their homes. The Sisters then moved to the City of St. Louis, although Father Schindel made an attempt to erect a new hospital close to St. Boniface Church at Schirmer Street between Michigan and Ivory Avenues, by building a foundation. Financial difficulties, however, compelled him to abandon the plan soon after January 5, 1878. This foundation lay idle until October 1887, when a superstructure, known as St. Boniface Hall, was completed, which is a veritable clubhouse for all the social activities of the people of St. Boniface Parish.

The work of the Franciscan Sisters was by no means stopped with the passing of St. Boniface Hospital. In fact it has grown steadily ever since. In St. Louis it was directed until 1895 from a Mother House at 14th and O'Fallon Street and since the latter date from St. Anthony's Hospital at Chippewa Street and Grand Boulevard. There are now several hundred professed sisters and a goodly number of novices at work in the various houses of the province.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

American Association of the History of medicine

Program of the *Seventeenth Annual Meeting,* Atlantic City, N. J., May 4-6, 1941 [Headquarters, Hotel Chalfonte]:

Sunday, May 4.

3.00 p. m. *Meeting of the Council.*

Monday, May 5.

10 a. m. *First Morning Session.*

R. C. Holcomb, Upper Darby, Pa.: Antiquity of Congenital Syphilis.

Gabriel Nadeau, Rutland, Mass.: Indian Scalping—Technique in Different Tribes.

Walter H. Jacobs, New York, N. Y.: The Teeth and Jaws as Described by Alexander Monroe, Primus.

Victor Robinson, Philadelphia, Pa.: Chronology of the History of Otology.

Emmet Field Horine, Louisville, Ky.: An Epitome of Ancient Pulse Lore.

Pan S. Codellas, San Francisco, Calif.: The Biography of the Carotid Arteries on the Basis of Etymology and Physiology.

2.00 p. m. *Afternoon Session.*

Business Session.

The Fielding H. Garrison Lecture.

George Sarton: The History of Medicine Versus the History of Art.

Symposium on Paracelsus.

Robert E. Schlueter, St. Louis, Mo.: Introductory Remarks.

Lilian Temkin, Baltimore, Md.: The Defensiones.

George Rosen, Brooklyn, N. Y.: Diseases of Miners.

Gregory Zilboorg, New York, N. Y.: Mental Diseases.

Henry E. Sigerist, Baltimore, Md.: On Nymphs, Sylphs, Pygmies and Salamanders.

Demonstration of the Paracelsus Exhibit by Robert E. Schlueter.

8.00 p. m. *Dinner Session.*

James B. Herrick, Chicago, Ill.: The History of Cardiology.

William G. Leaman, Philadelphia, Pa.: The Rôle of the Spanish Mission of California in Early American Medicine. [Demonstration of a colored motion picture.]

Tuesday, May 6.

10 a. m. *Second Morning Session.*

Hyman Morrison, Boston, Mass.: Leaves from a Biography of Reginald Heber Fitz.

Bernard Aschner, New York, N. Y.: Neo-Hippocratism in Everyday Practice.

T. G. H. Drake, Toronto, Canada: Antique Pewter Articles of Medical and Paediatric Interest.

Hyman I. Goldstein, Camden, N. J.: The History of Ulcer of the Stomach and the Duodenum.

David I. Macht, Baltimore, Md.: Science in Biblical Expressions. 1. Hebrew References to Bones and Marrow and 2. Hebrew References to Serpents.

Bruno Meinecke, Ann Arbor, Mich.: Aulus Cornelius Celsus—Plagiarist or *artifex medicinae*?

Members, their wives and guests are cordially invited to all sessions of the Meeting.

Speakers are requested to deliver their manuscripts to the Editor in Atlantic City so that the Transactions may be published without delay.

Delegates of Constituent Societies who are unable to present their reports personally or through another member of the Society are requested to send the reports to the Secretary before May 1.

Constituent Societies

The *Section on Medical History of the College of Physicians of Philadelphia* held a meeting on March 10, 1941 at which Dr. Iago Galdston read a paper on "The Specific in Medicine."

National News

American Institute of the History of Pharmacy

On the initiative of Dr. Arthur Uhl, Director of the School of

Pharmacy of the University of Wisconsin, the *American Institute of the History of Pharmacy* was founded on January 22, 1941, in Madison, Wis., with Dr. Uhl as President, Dr. Edward Kremers as Honorary President, and Dr. George Urdang as Director. An article describing the organization of the Institute, its purpose and aims will be published in one of the next numbers of the *Bulletin*.

University of California Medical School, San Francisco

An inventory of the *Crummer Room of History of Medicine*, completed on March 5, 1941, listed the following items:

Classics, including incunabula and manuscripts, 1471-1900		1,154
Special Collections:		
Californiana		1,331
University of California Faculty Collection		4,655
Reprints	3,562	
Books	735	
Miscellaneous	358	
Anesthesia		1,638
Brigham		150
Osler		606
Pharmacopoeia		108
Yellow fever		143
Cushing		109
Philip King Brown Collection: Socialized Medicine		424
Biographical Reprints: Foreign and American		262
Significant recent articles by prominent medical men		1,909
Bound volumes relating to medical history		1,784
Grand total		14,273

There is also a catalogue of approximately 20,000 biographical and historical pictures and portraits of which about 500 are filed in the Crummer Room.

The collection of historical medical instruments numbers about 300, mostly of the nineteenth century.

San Francisco, Calif.

On the occasion of the opening of the new Hahnemann Hospital in San Francisco a small historical exhibit was arranged in its library displaying the "Spiral Path of Medicine" [cf. this *Bulletin*, 1940, Vol. 8, p. 1189], and original works and translations of

Hippocrates, Paracelsus, Hahnemann and Bier showing the special references to homeopathy as well as pictures of these authors.

New Haven, Conn.

The sixty-second meeting of *The Beaumont Medical Club* was held in The Historical Library, Yale School of Medicine on Friday, March 14, 1941, at 5.00 p. m.

The following program was presented:

1. "Henry Burr Ferris" by Dr. H S. Burr
2. "Connecticut Medical Bibliography" by Dr. W. R. Steiner

At the time of the meeting the members were given the opportunity to inspect the new library, The Beaumont Room, and the Beaumont Memorabilia.

Following the meeting the members met for dinner at The Graduate Club after which a business meeting was held and the President, Dr. John F. Fulton, spoke on "English War Medicine."

News from Europe

Sweden

The 1940 volume of Lychnos, Annual of the Swedish History of Science Society, has been received. It has 500 pages, contains 17 papers, numerous book reviews and reports of the activities of the Society. The current Bibliography of the Swedish literature on the history of science will be published in the next volume. Papers published in Swedish have a summary in either English, French or German.

At the same time we received Vol. XXIII, 1940 of the Year Book of the Linné Society, Svenska Linné-Sällskapets Årsskrift.

Soviet Union

In commemoration of the 175th anniversary of the foundation of the Medical Faculty of the University of Moscow, now the *First Moscow State Medical Institute* the People's Commissariat of Public Health of the USSR published a memorial volume: 157 Лет Первого Московского Государственного Медицинского Института, Moscow-Leningrad, 1940, Medgiz, 436 pages and many illustrations.

The volume is edited by I. D. Strashun who contributed the introductory article, the general history of the school. The volume then contains articles on the history of all the departments of the school written by the present department heads. At the end there is a list of the 218 professors who held chairs in the school from 1764 to 1940.

A short history of the *Military Medical Academy* in Leningrad was published on the occasion of its 140th anniversary under the title: **Военно-Медицинская Академия Красной Армии имени С. М. Кирова за 140 лет (1798-1938), Краткий Исторический Очерк**, Leningrad, 1940.

BOOK CATALOGUES

Froben Press Publishers, 4 Saint Luke's Place, New York City, Catalogue II, History of Medicine.

Schuman's, 730 Fifth Avenue, New York City, Medical Miscellany, List A.

Schuman's, 730 Fifth Avenue, New York City, Catalogue Seven, Rare Medical Books.